The University of Chicago

THE MINES OF THE UPPER HARZ FROM 1514 TO 1589

A DISSERTATION

SUBMITTED TO THE FACULTY
OF THE GRADUATE SCHOOL OF ARTS AND LITERATURE
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
DEPARTMENT OF HISTORY

BY

HELEN BOYCE

The Collegiate Press
GEORGE BANTA PUBLISHING COMPANY
MENASHA, WISCONSIN
1920

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PREFACE

The purpose of this essay is to draw the attention of the English reader to the historical importance of German mining. This branch of economic history has been the object of much study in Germany, but except the brief references made by Mr. G. R. Lewis in *The Stanneries* and the introduction and notes in the Hoover translation of Agricola's *De Re Metallica* I know of nothing in English on the subject.

Germany included within its boundaries the most important metal producing centers of the Middle Ages and from them ore was exported to France and England. Moreover, the possession of great quantities of silver gave Germany an independence in solving the difficult problems of currency which was shared by no other country of northern Europe. The mines not only brought material prosperity, but played a part in that most important phase of German history, the eastern colonization movement. For it was the discovery of ore in the Erzgebirge which lured trained miners in great numbers, from the west to the mark of Meissen, Bohemia, Hungary and Silesia. The importance of these mines in the eyes of the sovereign is to be measured by the privileges granted to the workers which at the best spelled practical self-government. As a result of the careful regulation of the industry great codes of mining laws were developed.

A general introductory chapter on German mining is included in the essay to emphasize the fact that the present study is concerned with but a tiny corner of a great and important field. The history of the Harz mines falls into two periods. The first was closed by the Black Death (1347); from that time the mines lay idle for more than a hundred years before work was recommenced in the late fifteenth century. Though there is no historical continuity between the two periods, the inclusion of the earlier one seemed justified by the demands of the subject as well as by the plan of Hake's chronicle on which this study was based.

It is this local, contemporary chronicle of the Upper Harz mines in the sixteenth century which has made possible the main

part of this essay, the more intensive survey of the activities of these mines during a prosperous period in their history. Hake was quoted by at least two writers of the eighteenth century, and parts of his chronicle have been recently used by Friedrich Günther in local studies. But the chronicle seemed to contain greater possibilities if the period it covered could be treated as a unit. This period chanced to include the reigns of two princes of Brunswick, father and son, whose careers offered an excellent study in contrasts. Under the father, the history of the little mining towns was frequently involved with the issues of the Reformation struggle, while the reign of his son fell in the years of reaction which followed the Peace of Augsburg. The attempt has been to reproduce a cross-section of the life of this group of specialists: to show how their industry depended on the conditions which governed it in other parts of the Empire, to observe the share they took in the politics of their age, to enter into their spirit of work and of play, and to understand their code of morals. Finally, this local industry has been shown in its relation to the business of the period and the dependence of the Harz mines on the great trade routes of Germany has been indicated.

The technical processes of mining have been regularly neglected.

Without the Hohenzollern Library at Harvard University this study would have been impossible. I am especially indebted to Mr. A. C. Coolidge for the generous way in which these books were placed at my disposal, and to Mr. Roscoe Pound of the Harvard Law School who imported Wagner's *Corpus Juris Metallici* for my use. Calvör's *Historische Nachricht* was a loan from the Columbia University library.

Mr. James Westfall Thompson first drew my attention to Hake's Chronicle. Words express but poorly my grateful appreciation of his tireless help and repeated encouragement.

HELEN BOYCE.

Chicago, 1919.

POSTSCRIPTUM

It is with a sentiment of poignancy that I write this postscriptum to the preface of this little book. For it is the work of a student of history of unusual promise, who died shortly after the completion of the doctorate, and before her work could be published.

Helen Boyce was graduated from the University of Chicago in 1905, and two years later entered the graduate school as a student of history, archaeology and the history of art. Intervals of teaching from time to time interrupted the continuity of her studies, so that a decade ensued before she secured the higher degree. She was a teacher for a time in the Woman's College at Constantinople. After returning to this country she taught in the Halstead School at Yonkers, N. Y. She was in charge of the history courses in the Faulkner School in Chicago for several years, and there, as elsewhere, won the loving respect of each associate teacher and of every student by her fairness, for her helpfulness, for her loyal, unselfish interest in others, and above all for her rare scholarship. From the beginning Miss Boyce was distinguished for her intellectual ability, her proficiency for research, her unusual breadth of culture.

Early in her course Miss Boyce manifested special interest in the history of the later middle ages, and the manuscript whose character and history she has related fixed this determination. As the instructor who suggested the subject of the dissertation and guided her researches more than any other, it has fallen to my lot to see through the press this first—and last—production of one whom all who knew her must feel to be untimely lost. Miss Boyce received the degree of doctor of philosophy (*magna cum laude*) in 1917, and died on May 8, 1920.

Una dies aperit, conficit una dies.

The premature termination of a life which possessed so much promise and potency for larger research has tragic implications for both mind and heart. One who knew her intimately writes: "Her gracious charm as a woman, her well-balanced habits of thinking, her quiet power in the expression of her ideas, gave her a place as a teacher, as a fellow-student and as a friend that cannot be filled."

I have added a few notes, especially in the first chapter, and read the proofs; but I have taken no liberties with either text or notes beyond mere typographical correction.

JAMES WESTFALL THOMPSON

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INTRODUCTION

The Mine Chronicle of Hardanus Hake

This study is based on a chronicle of the Upper Harz Mines which covers the years from 1505 until 1583. It was written in the sixteenth century by Hardanus Hake, the pastor of one of the towns of the district. The main portion of the chronicle was published for the first time in 1911 under the title *Die Bergchronik des Hardanus Hake, Pastors zu Wildemann* and was edited by Dr. H. Denker of Osnabrück.[1] The work was originally divided into three parts of which only the third is published.[2] The first, a short chronicle of the Saxon house within whose dominions the Harz mines were included, has disappeared.[3] The second, dealing chiefly with Biblical references to mining, has no historical value and is omitted by Dr. Denker. The third and most important part of the work begins with an historical sketch outlining what little is known of the Harz mines from their opening in the tenth century until work in them was stopped by the Black Death in 1347. The chronicle proper covers the period from the revival of work in the Upper Harz mines towards the end of the fifteenth century until 1583.[4] These mines lay in that section of the Saxon lands which came into the

[1] The frequent references to this edition will be to Hake, *Bergchronik*. The work is cited in Praun, *Bibliographie Braunschweig-Lüneburg*, Wolfenbüttel, 1744, No. 700: "S. Hardanus Hake Pastor zum Wildemann, Chronica der Bergwercke zu Goslar, Cellerfeld, Wildemann, Grund und Lautenthal. Ms. 1617." Portions of the chronicle are to be found in Brückmann's *Magnalia Dei in locis subterraneis II*. Wolfenbüttel, 1730. Several anecdotes taken from it are printed in the *Neues Vaterländische Archiv des Königreichs Hannover*, 1829, under the title *Harzreise Heinrich der Jüngere*, but no author is mentioned. Günther has published in the *Zeitschrift des Harz Vereins* for 1906 the charters of 1532, 1553, and 1556, all of which form part of the chronicle. This material has been used as a principal source by various writers, among them, Henning Calvör in his *Historisch-Chronologischen Nachricht des Maschinenwesens auf dem Oberharze*, Brunswick, 1763, and his *Nachricht von den Unter und Oberharzischen Bergwercken*, Brunswick, 1765 and R. L. Honemann in his *Alterthümer des Harzes*. Leipzig, 1827. See H. Z. 1907, 88. Denker, *Einige Bemerkungen*, etc.

[2] Hake, *Bergchronik*, 108, 26.

[3] *Ibid.*, IV and XII.

[4] The earliest date found in this portion of the work is 1505.

possession of the Wolfenbüttel line of the house of Brunswick and the period covered by Hake corresponds roughly with the reigns of Henry the Younger and his son Julius (1514–1589).

The original of the mine chronicle has been lost. Nine manuscript copies of it are known to Dr. Denker.[5] These he divides into two classes according as they contain or do not contain part two.[6] They are to be found at Berlin, Hanover, Clausthal and in other German libraries, and were written between 1617 and 1720. A tenth manuscript of the chronicle is owned by the University of Chicago.[7] This is written on paper and contains 140 folios 33x20.6 centimeters in size which bear modern pencilled numbers. It was bound in boards after the writing was completed. The written label is illegible. The first 16 folios contain the *Kirchen, Schul and Spital Ordnung* written in 1551 for the Protestants of Joachimsthal in Bohemia by Johannes Mathesius.[8]

In the Chicago manuscript Hake's chronicle, chiefly in German, is written in three different hands. It includes part two as well as part three, but they are not chronologically arranged. The first entry (folio 19 *recto*) begins "Rammelsbergische bergwerk last sich ao 1527 wohl an." This division of the work, part of it in Latin, is hastily and illegibly written, and is much abbreviated. Many pages have been torn out. It covers the years from 1527 to 1583, and belongs therefore to part three. Part two (beginning on folio 45 *recto*) is in small legible writing and is entitled "Von Aufkomen der Bergwercke Steigens undt fallens von Ambts Personen und Geschichte der Bergstädte," with the subtitle "Wie Adam und Adams Kinder Bergwerck gebauet für der Sundfluth."[9] Part three (folio 60 *verso*) begins in the

[5] Hake, *Bergchronik*, XIV.

[6] X and Z. *Ibid.*, XV.

[7] This manuscript was in the collection purchased in 1892 by the University of Chicago from S. Calvary and Company, Berlin. It has not been possible to learn from whom Calvary acquired it. It is number 68 in *A Descriptive Catalogue of Manuscripts in the Libraries of the University of Chicago*, by E. J. Goodspeed.

[8] This is not in the handwriting of Mathesius, as Goodspeed suggests, *op. cit.*, 88. G. Loesche in his *Johannes Mathesius*, Gotha, 1895, gives a specimen of the preacher's writing. In the Chicago manuscript under the title, folio 1, appear the words "gestelt durch den altenn Herrn Johann Mathesius" which he would hardly have written himself.

[9] This introductory portion of the work occurs also in the manuscript in the Landesgeologischen Anstalt und Bergakademie in Berlin, and in that in

same writing, with the heading "Von Aufkomen der Bergwercke am Hartze dieses Fürstenthumb."[10] The main division of the chronicle (folio 76 *recto*) fills the rest of the book and is in a third handwriting which is flowing and legible (to folio 140 *verso*). Without title, the *incipit* runs, "nach dieser Zeit und Letzten auflaszung sind die Bergwercke eine geraume lange Zeit sonderlichen bey uns hier auf dem Hartze dieser jetzigen Bergstädte ungebauet beliegen blieben." The earliest date in this part is 1505 and the narrative continues through the events of the year 1568.[11] It will thus be seen that the years from 1527 until 1568 are covered twice. The later entry is the expansion of the first brief, hasty notes but contains no new material. It has marginal notes in Latin and German in the handwriting of the first entry. Here and there parts are missing. The most important omissions from the Chicago manuscript are found in Dr. Denker's edition page 79 line 40 to page 85 line 10 and page 117, to the end.[12]

The author's name is found once in this copy where the entry for 1572 speaks of "autor hujig operis (Hardang Hake)."[13]

The approximate date of this manuscript may be learned from the water-marks. Of the three different kinds of paper on which Hake's chronicle is written, the oldest, (folio 19 to 45) was used for documents of 1661 and 1662 and is marked with the unicorn.[14] The "Wildermanne Glocke" with a standing gnome and the letters A H H B on one side of the sheet and a bell surmounted by a

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the archives at Hanover. See Hake, *Bergchronik*, XII, and Günther *Die Gründung der Bergstadt Grund*. H. Z. 1906, 44.

[10] That portion of the chronicle which, in Denker's edition is found on pages 20 to 32 is missing in the Chicago copy.

[11] The following diagram illustrates the relationship between Dr. Denker's edition and the Chicago manuscript.

Denker	*Chicago MS*
I. Lost in all manuscripts.	
II. Not published by Denker.	II. Folio 45 *recto* to folio 60 *verso*.
III. Pages 1 to 151.	III. Folio 60 *verso* to folio 140 *verso* (1568) and Folio 19 *recto* (1527) to folio 42 *verso* (1583).

[12] It has not seemed important to discuss the slight details in which the Chicago manuscript varies from the version printed by Dr. Denker.

[13] Folio 37 *recto*. The name does not appear in the manuscripts known to Dr. Denker.

[14] Mathesius' *Kurzer Bericht* is on a fourth sort of paper which it has not been possible to identify satisfactorily.

crown on the other (folio 45 to 75), is found in paper which was used from 1707 until 1730. The third sort of paper (folio 76 to the end) has R. W. on one side and a bear within a circle on the other. Large quantities of this paper were made in 1719 and it was used for local documents from 1709 until 1723.[15] Another clue to the date of the Chicago manuscript is a marginal note (folio 80 *verso*) in the handwriting of the first entry "Epitaphium quod Pastor Alshuhang in ejg memoriam scripsit vide apud Rehtmeier Aut. Brunsv. lib 3, cap. 56." The only edition of Rehtmeier's *Chronica Braunschweig-Lüneburg* was printed in 1722. The conclusion is then, that the Chicago copy of the chronicle like those in Berlin and in Clausthal was made shortly before 1725. The original work contained 198 pages and occasional references to it are made in the Chicago manuscript.[16]

The period at which Hake wrote his chronicle may also be somewhat definitely fixed. In all parts of the work frequent mention is made, not only of Duke Henry and Duke Julius, but of rulers over other parts of the Brunswick lands who lived during the sixteenth century.[17] There are several references by which the date can be more exactly determined. For instance the author speaks of the "district of Duke Wulff and Duke Philip." These princes were of the Grubenhagen line, and the last of them died in 1596, in which year the house of Brunswick-Wolfenbüttel inherited their property.[18] The entry for the year 1536 speaks of "Michel Dannenberger now the judge of this mine city of Wildemann."[19] Dannenberger held this office in 1581 and 1582.[20] Again, Hake mentions as still living, Duke Erich of

[15] For this information I am deeply indebted to the kindness of Herr Oberbergamts Secretär F. Muhlan who graciously looked up the water-marks in the library at Clausthal where there is a manuscript list with drawings of the water-marks found on documents of the Upper Harz from 1600 until 1750. This was made by the late Herr Berghauptmann Achenbach. See also H.Z. 1906, 43, and Denker, *op. cit.*, 88. If I am right in thinking that the marginal notes of the last entry are in the handwriting of the first one, the paper used for the hasty notes covering the years 1527 to 1583 (folio 19 to 45) was old when the writing was done. There is a period of about sixty years between the making of the two papers.

[16] Denker, *op. cit.*, 91.

[17] Examples are to be found in the *Bergchronik*, 16, 39; 17, 27; 18, 18, etc.

[18] Hake, *Bergchronik*, 18, 18, and Denker *op. cit.*, 93.

[19] Hake, *Bergchronik*, 43, 24.

[20] *Ibid.*, XI.

Calenberg who died in 1584.[21] While writing of the year 1578 the author speaks of officials "who have remained until this time, year '83."[22] The conclusion then, is that the original work was written between 1581 and 1583.

The spirit of the chronicle bespeaks careful, painstaking authorship. For the introduction Hake uses such well known authorities as Tacitus, Otto of Freising, Thietmar, Lambert of Hersfeld and Sebastian Münster and frequently cites exact references, which are accurate so far as it has been possible to verify them. For the chronicle itself there is abundant evidence that Hake had access to the official mine records. He often refers to the "Bergbuch," to the "Recessbuch," and to the "Fürstlichen Geschichten."[23] He also speaks of a history "so incerto autore."[24]

Hake was the only historian of the Upper Harz district for his period. The story of his uneventful life is told in an autobiographical sketch found by Dr. Denker in the archives at Wolfenbüttel.[25] German by birth, Hake was installed as Lutheran pastor at Wildemann in 1572. The date of his death is not known but in 1610 he was no longer in office.[26] Of himself he wrote: "I wandered to inspect cities and country, and also to learn what things were happening here and there." On his return from these travels he settled at Wildemann where he spent more than a year in writing his chronicle.[27] This was dedicated to Julius, the reigning duke of Brunswick-Wolfenbüttel, to whom Hake sent the manuscript. The only other work by Hake which has been preserved is the funeral sermon which he preached for Duke Julius. This was printed and seems to have been well known. In praising what this prince had done for his duchy, Hake again took occasion though less fully than in his chronicle, to discuss the mines of the Upper Harz.[28]

[21] Hake, *Bergchronik*, 33, 42.
[22] *Ibid.*, 114, 18.
[23] *Ibid.*, 36, 42; 41, 32; 44, 35; 52, 17; 48, 8, etc.
[24] *Ibid.*, 4, 22.
[25] This is published in Hake, *Bergchronik*, III ff.
[26] F. Günther, *Zur Kritik der Hakeschen Chronik* H. Z. 1906, 42; H. Denker, *op. cit.*, 91; Hake, *Bergchronik* VI.
[27] *Ibid.*, IV.
[28] Cited by P. J. Rehtmeier, *Braunschweig-Lüneburgische Chronica*, 1008. Though this sermon was printed, only one copy of it is known to Denker. This is in the archives at Wolfenbüttel. Hake, *Bergchronik*, VII.

CHAPTER I

An Historical Survey of German Mining

It is well known that the Romans conducted mining operations within the lands which in later centuries constituted the Holy Roman Empire, but it is impossible to establish any connection between Roman and German mining.[1] Accounts of the industry under the Merovingian and Carolingian rulers are so rare that it probably was of no great importance down to the end of the latter period.[2] Mines in the southern part of the Empire, in Styria, Salzburg and the Tirol were worked earlier than the tenth century,[3] but in the north the mineral deposits were unused until towards the end of the tenth century, when, under Otto the Great the Rammelsberg mine near Goslar in the Harz was first opened.[4] The mines in the mark of Meissen date from the middle of the twelfth century[5] and those of Bohemia and Silesia from the beginning of the thirteenth.[6] The industry became from the end of the twelfth century an important feature in German economic history.

The astonishing spread of mining in the Empire is to be interpreted as part of the eastward expansion of the Germans by which the Slavs were driven back beyond the Oder.[6a] The first miners in the Harz were of Frankish stock, but the place from which they emigrated is not certainly known.[7] According to a generally accepted tradition miners from the Harz in the twelfth century,

[1] Schmoller, *Die Geschichtliche Entwickelung der Unternehmung.* Jahrbuch für Gesetzgebung, XV, 675, also Ermisch, *Das Sächsische Bergrecht des Mittelalters.* IX.

[2] *Ibid.*, X.

[3] Inama-Sternegg, *Deutsche Wirtschaftsgeschichte*, II, 330.

[4] *Ca.* 970. For the evidence see Waitz, *Jahrbücher des Deutschen Reichs unter König Heinrich I*, 238.

[5] Ore was discovered at Freiberg *ca* 1170.

[6] Ermisch, *op. cit.*, XIII, XIV.

[6a] See J. W. Thompson, East German Colonization in the Middle Ages, Annual Rep. Amer. Hist. Assoc. 1915, 123–50.

[7] Hake, *Bergchronik*, 2 ff. This rests on the statement made in the *Annalista Saxo* written in the twelfth century. *Monumenta Germaniae Historica*, VI, 660. Henry II in 1009 granted the Rammelsberg to Gundelcarl, a Frank. For a discussion of this problem see *infra*, 15.

were the first to discover ore in the district about Freiberg.[8] A rush of German miners east to the Erzgebirge followed and by 1225 Freiberg was a flourishing city.[9] But the mark of Meissen was not assured to the Germans until the discovery of silver at Schneeberg about 1460 brought a second influx of colonists from the west. Franks also carried their technical knowledge from Saxony to Bohemia and Hungary, where Schemnitz, a famous mining town, bears the name of a Saxon river.[10] In southern Hungary mining had probably not been interrupted since Roman times.[11] The indications are that the gold mines in Silesia were opened by men of Frankish blood. Evidence that the miners were a wandering class is seen in the names *hospites* and *coloni* by which they were known, and it was not until the sixteenth century that German mining lost this character of a colonizing movement.[12]

The earliest documentary proofs of German mining date from the twelfth century and multiply rapidly between 1200 and 1400.[13] Of these, the charter of Trent (1185), that of Goslar (1219–1350), the mining law of Iglau (1249–1300), the Kuttenberger regulations (1300) and the law of Freiberg (1296–1400) are the most important.

Some mines were in the possession of the fisc, while others belonged to territorial lords both lay and clerical. For the Carolingian period it is impossible to determine whether this ownership of mines went with ownership of the soil or was an element of sovereignty.[14] Under Frederick I, (1152–1190) the principle was established that mines, even on private lands were a legitimate

[8] Ermisch, *op. cit.*, XVI; Agricola, *De Re Metallica*, Ed. by H. C. and L. H. Hoover, 36, n. 16.

[9] Lamprecht, *Deutsche Geschichte*, III, 362.

[10] Schmoller, *op. cit.*, 677, speaks of these men as "Fränkische Siedler" but says nothing of their place of origin.

[11] Arndt, *Bergbau and Bergbau Politik*, 11.

[12] Schmoller, *op. cit.*, 677.

[13] *Ibid.*, 661.

[14] Inama-Sternegg, *op. cit.*, II, 331. The question of the ownership of mines has been much disputed. The position taken here is that held by most recent writers. For a discussion of the subject see Schmoller, *op. cit.*, 669 and following, especially the note on page 694. The lead and iron mines mentioned in the Capitulary *de villis regiis* of Charlemagne were in the nature of the case, on land owned by the king. See Zycha, *Das Recht des ältesten deutschen Bergbaues*, 14; Agricola, *De Re Metallica*, Hoover's translation, 82, note.

source of public revenue.[15] Hoover, in his translation of *De Re Metallica*, says: The charters "contain, nevertheless, rigorous reservation of the regalian right. The landlord, where present, was usually granted some interest in the mine, but had to yield to the miner free entry. The miner was simply a sort of tributer to the Crown, loaded with an obligation when upon private lands to pay a further portion of his profits to the landlord." Probably this was not an innovation and from the beginning mines had been recognized as belonging to the ruler. However this may be, the principle of Barbarossa gained acceptance and the sovereign was recognized as sole proprietor of all mines whether he owned the surface under which they lay or not. He alone had power to grant to individuals the right to work mines in those cases where he did not carry on the industry himself. When he leased a mine it was divided into shares, part of which he kept; he also retained oversight of the work through his power to appoint officials.[16] In the Empire the rulers gradually ceased to exploit the mines themselves; instead, they granted this right to associations, at the same time maintaining a sort of supervision of the work.

In spite of variations among the few twelfth century sources, it is clear that even at that period mining was conducted by an association in which a real principle of organization existed, and that thus a technically trained stock of miners was developed.[17] The mining regulations of the thirteenth century throw some light on an earlier phase and reflect a period from which we have no records in which the prince worked his own mine by the labor of his own people.[18] In other words, the earliest German mines were feudal enterprises. The lords of the Middle Ages habitually gave out from 90 to 95% of their land in exchange for service or rent and the mines are to be numbered among such fiefs. When land was given to strong men they, in turn, were allowed to sublet mining and smelting rights.[19] Though these concessions in no way implied ownership, the lessees gradually gained freedom from taxation, at the same time decreasing the amount of their pay-

[15] Lewis, *The Stanneries*, 68.
[16] *Ibid.*, 69.
[17] Inama-Sternegg, *op. cit.*, II, 338.
[18] Schmoller, *op. cit.*, 670.
[19] *Ibid.*, 676.

ments of ore to the lord.[20] From this right of granting mines the lords obtained great influence over their management as well as over their output.[21] This second stage in the evolution of German mining, in which territorial lords leased their ore bearing lands, brought about the organization of the lessees into self-governing associations, each of which controlled its own mine. This organization formed the germ of the later company and from the beginning of the thirteenth century left the older management by the lord in obscurity.[22] It was inevitable that as mining developed and greater engineering undertakings, such as the building of galleries, became necessary, permanent holdings and larger capital were essential. Under these conditions the tendency was for the lord to take charge of operations. He was represented by officials and the embryo company also retained its organization; but gradually the free workers instead of being paid a proportionate share of ore, were degraded until by the fifteenth century they had become mere wage earners.[23] As mining proceeded on a larger scale, the size of holdings increased and it became impossible for one man to work his own share unaided. Through his right to sublet the whole grant, two classes developed, the associates who did no manual work, and the hired laborers.[24] "By 1400 it was the exception if actual workers owned any considerable shares in the mine."[25] Though a laborer might better his condition, he rarely became a member of the company. The greater number of these members were burghers of the mine city; in fact to become a burgher in such a city it was necessary to own shares or carry on some mining enterprise.[26]

As has been seen, the spread of German mining is to be considered as part of a colonization movement. To attract and retain these valuable skilled laborers the territorial lords found it necessary to make a privileged class of them. These privileges given to miners were "exemptions from the common law, for those who were ready to begin at their own risk, mining operations for their

[20] Schmoller, *op. cit.*, 671.
[21] Inama-Sternegg, *op. cit.*, III part 2, 148.
[22] *Ibid.*, III, part 2, 152.
[23] Schmoller, *op. cit.*, 686.
[24] Inama-Sternegg, *op. cit.*, III, part 2, 159.
[25] Schmoller, *op. cit.*, 705.
[26] *Ibid.*, 706.

own profit and that of the lord."[27] These inducements were intended to decoy to the east trained workers from the older mines of the west. Among the lures offered by the lord were freedom of the person and of justice and the free use of wood and water. The first of these privileges was issued by the bishop of Trent in 1185. When the development was successful a group of mines was raised to the status of a free mine city, the highest advancement open to this industry.[28] In such cases the miners were protected by town law as well as by their own codes, and were exempted from taxes and military service and were allowed to slaughter, to bake and to brew. They were freed from the control of gilds. In the fifteenth century Freiberg, Goslar, Iglau and Kuttenberg were among the mine cities. Where there was no fusion of city and mine, the mine judge had charge of all matters of justice and organized all who were connected with the mine into a special court for the decision of local cases. The importance of mining law is to be correctly understood only when it is kept in mind that the judge through his decisions and the principles laid down in them moulded the condition of the workers, the organization of the business and the government of the community.

The thirteenth century was the first great period of prosperity for German mining, and particularly for silver mining.[29] The succeeding century though important in some places, was on the whole a time of retrogression. The cause of this decline was that the simple technique of the earlier phase used only the surface ore and exhausted a mine within two or three generations. A second and more profitable period which lasted from 1480 to 1570 was due to such technical advances as the introduction of water power and the building of great galleries which made it possible to use the ore which lay far below the surface. But in spite of such improvements no mine was at its best for longer than a century. Numerous new localities were also opened to the industry at about the time of the Reformation. This second period, one of great economic prosperity, gave birth to the great mining codes which lasted down to the middle of the nineteenth century. The mines in many cases were an important, if not the chief source of

[27] Schmoller, *op. cit.*, 676.
[28] *Ibid.*, 677; Lewis, *op. cit.*, 73.
[29] Schmoller, *op. cit.*, 963, 964, 965.

wealth for many rulers and as such were most carefully controlled by law. Most influential were the regulations of Maximilian I of Austria and the Saxon codes dating from 1479 to 1589. From the latter are derived almost all the later ordinances of middle and north Germany.[30] Simply because of regalian rights in mines Saxony was, with the exception of Austria, the richest country in the Empire,[31] but the Hapsburg ambitions outstripped even their great wealth. From the end of the fifteenth century the emperors borrowed heavily of the south German financiers, the Fuggers, mortgaging for this purpose the regalian rights in their mines.[32] This era which produced the great mining codes of Germany owed its impulse to the production of silver in new fields.[33] The period began from 1460 to 1480, was at its height from 1500 to 1540, and lasted through the century. The Saxon ordinances issued for Annaberg and Joachimsthal during these years were used as models by most German princes. Even the codes for Salzburg, the Tirol and Bavaria have a certain connection with them.[34] These regulations have a tendency to generalize for a whole district; they are concerned, not with matters of technique, but with the rights of the companies, and with the management. In theory, there were in a silver mine from 122 to 128 shares, with an equal number of shareholders. This made it easier to get capital and to pay the temporary subsidy (*Zubusse*) for running expenses, which in the most prosperous periods of the best mines was three times the profit.[35] Company organization was necessary to make the mine profitable. The shares might be owned by burghers of the mine city itself, or by the corporation of a neighboring or even of a distant city. The well-known case of the operation by Goslar of the Rammelsberg mine is an example.[36] Nuremberg and Augsburg early had shares in the Saxon silver mines, and the copper works at Eisleben were conducted by men from Nuremberg.[37] The investment of foreign capital worked hardship in

[30] Ermisch, *op. cit.*, CLXIV.
[31] Schmoller, *op. cit.*, 968.
[32] *Ibid.*, 972.
[33] *Ibid.*, 979.
[34] *Ibid.*, 980, 981. The code of 1517 for Austria, Steiermark, Carinthia and Carniola is the first example of an ordinance for several provinces.
[35] *Ibid.*, 986.
[36] *Ibid.*, 969. Neuburg, *Goslars Bergbau bis 1552.*
[37] Ehrenberg, *Das Zeitalter der Fugger*, I, 189.

taking the profits out of the district; it also made regular bookkeeping necessary and so is said to have aided the spread of the Saxon mining codes.[38]

The custom of granting mines with hereditary rights for an indefinite period, persisted well into the fifteenth century,[39] when fixed leases for a definite term of years gradually became the custom. This made a great difference in the condition of the laborers for the companies controlling the good mines paid entirely in wages, not in ore.[40] Only a uniform wage could make the position of the worker sure, for this class had suffered greatly from the uncertainty connected with the sale of ore, the cost of smelting, etc. In the sixteenth century work in the Saxon mines was done exclusively by contract, while in Austria the old system was inextricably entangled with the new method.[41] Probably it was through Saxon influence that the granting of fiefs fell into disuse and that contracts for weekly wages based on the output of ore took their place. The laborer now worked for assured pay instead of assuming the risk of running the business.

In spite of this security, many complaints arose over the increased cost of living and insufficient wages.[42] The Peasants' Revolt (1525) of course made for unrest in Saxony, northern Bohemia and the Tirol. The result of such disturbances was the miner's law (*Bergarbeitsrecht*) whose principles remained in force until 1861.[43] On the whole, though difficulties still persisted, these new regulations greatly improved the condition of the miners who formed a privileged and self-respecting class. The well known Saxon ordinances provided assistance for sick workmen. A fund for that purpose was established (Annaberg 1503) of which half was deducted from the wages of the miners while half came from the profits of the mine. Labor unions or brotherhoods of the diggers and smelters were formed. The twelve oldest miners acting as a council were charged with the settlement of disputes and controlled the sick fund.[44]

[38] Schmoller, *op. cit.*, 989.
[39] *Ibid.*, 1002.
[40] *Ibid.*, 1004.
[41] *Ibid.*, 1006.
[42] This may be studied in Freiberg. *Ibid.*, 1007.
[43] *Ibid.*, 1009.
[44] *Ibid.*, 1016.

The organization of the mining company in the sixteenth century is most clearly seen in the ordinances of the Erzgebirge. The board (*Bergamt*) at Joachimsthal was composed of the chief mine officials, a jury of ten of the most intelligent smelters and miners, and some other persons.[45] Some of the higher mine offices carried such power that there was a terrible temptation to misuse it.[46] Officials grew rich by reason of their positions. The ordinances attempted reform, forbidding officeholders to own shares or to engage in business, but it was difficult to enforce the new regulations. The difficulties experienced by these mining companies of the sixteenth century are exactly those which stock companies and large associations have to deal with today. Hundreds of people knowing nothing of the technical side of the business are in the company simply to get a return on their investment. Success is dependent on the officials employed.[47]

[45] In 1561 there were 59 of these officials. *Ibid.*, 1021.
[46] *Ibid.*, 1025.
[47] *Ibid.*, 1029.

CHAPTER II

The Harz Mines Until 1347

Hake prefaces his chronicle with a general sketch: "Concerning the Rise and Fall of the Mines, Concerning Official Persons and the History of the Mine Cities."[1] Often he cites his sources for this period which lasted until 1347; sometimes he weighs conflicting evidence, and frequently he gives exact references.[2] This introduction, the least satisfactory part of the work, is broken by great gaps, for the history of the Harz mines is known only fragmentarily during the first centuries of their existence. Hake, writing in the sixteenth century, knew of no local chronicle and obtained his scant information from general works. He laments the absence of an account which should tell "exactly what happened from year to year," and considers the lack especially strange "because there were so many learned people up here in the neighboring monastery."[3] He thinks that so "chronicle worthy" a subject as mining was neglected because scholars were ignorant of the technical terms used in the industry, and adds that "no one can write of a thing which he has not experienced or seen." In this rather disjointed portion of the narrative it is often difficult to tell whether the author is writing of the Upper Harz mines or of the better known Rammelsberg. Since lower Saxony was often the center of the European stage during these centuries the local story from time to time becomes involved in general history.

The date of the discovery of ore in the Harz is a disputed question.[4] According to the generally accepted testimony of Thietmar of Merseburg, the first silver was found in the Rammelsberg in 965 during the reign of Otto the Great. (936–973).[5] Later

[1] The first two folios in which Hake cites what Tacitus, Gigolia, Andrea Altgameri, Sebastian Münster and others say of metals in Germany, are not printed by Denker.

[2] These references where it has been possible to verify them, have been found accurate.

[3] Hake, *Bergchronik*, 19, 17.

[4] The evidence concerning it has been published by Waitz, *op. cit.*, *Excurs* 15, 238. Cf. Dümmler, *Otto I*, 498.

[5] *Thietmari Merseburgensis Episcopi Chronicon*, II, 13(8), "Temporibus suis aureum illuxit seculum; apud nos inventa est primum vena argenti"; Thietmar died in 1018.

writers have placed the event in the reign of his father, Henry the Fowler, but such evidence is rejected by Neuburg who is unwilling to date the event more exactly than in the last years of Otto I.[6]

According to tradition, the first miners in the Harz were of Frankish stock. The earliest statement to this effect is found in the *Annalista Saxo* written in the twelfth century. The story runs that in 1009 the Emperor Henry II granted the Rammelsberg to one Gundelcarl. "Without delay, he went to Franconia, for he was himself a Frank, and brought back with him many of his people. They built up the place Goslar and found veins of metals, of silver, copper and lead."[7] A later version places the influx of *Francken* in the reign of Otto the Great. This seems to be followed only by local writers.[8] Without much confidence in the truth of the story, Hake tells how Otto the Great brought these artisans back with him from western Francia,[9] where with an army he had gone in 949 to the rescue of his brother-in-law, the Karling, Louis d'Outre Mer (936–954) who was then struggling with another brother-in-law of Otto, Hugh the Great.[10]

[6] Neuburg, *op. cit.*, 1. For further evidence on this point see Gerdes, *Geschichte des Deutschen Volkes*, I. 393; Crusius, *Geschichte der Reichstadt Goslar*, 19; Calvör, *Historische Nachricht*, 11 ff. Hake, *Bergchronik*, 1, 30 ff., says that the writers known to him unite in placing the opening of the Harz mines in the reign of Otto the Great. The chronicler, does not omit the legends connected with the discovery. For the origin of the story of the emperor's forester Ramme, see Waitz, *op. cit.*, 239.

[7] *Monumenta Germaniae Historica*, VI, 660. "Tandem rex victus inportunitate hominis, montem concessit, dicens, se tamen velle, quod utiliora sibi petivisset. Nec mora, homo iam dictus Franconiam adiit—erat enim et ipse Franco,—et plures gentes sue assumens socios, locum Goslarie edificare cepit, primusque venas metallorum argenti, cupri seu plumbi ibidem repperit." This version is also found in the *Chronicle of Engelhuisis* who died in 1434. The chronicle is printed by Leibnitz, *Scriptores rerum Brunsvicensium*. II, 1073. According to the *Chronica Saxonum* of Henricus de Hervordia, ed. Potthast, p. 74, king Henry I 'civitatem Goslariam fundavit,' which Potthast and Eggers, *Die königliche Grundbesitz*, 61, think trustworthy. Cf. *Ann. Palid.* anno 924, SS.XVI, 61 and *Urkb. der Stadt Goslar* (Halle 1893), Einleitung.

[8] Hake, *Bergchronik* 2 and ff., also Zeiller, *Topographia Braunschweig und Lüneburg*, 170.

[9] (See p. 22 for note 9.)

[10] Hake says "Hugonem Capetum" which is, of course, a mistake. Neither Dümmler, *Kaiser Otto der Grosse*, nor Lauer, *Le règne de Louis d' Outre-mer*, ch. 4, mentions the story. See also, Calvör, *Historische Nachricht*, 15.

With a truly critical spirit, Hake comments on the fact that the chroniclers of Otto the Great who were his contemporaries or lived soon afterward fail to mention these *Francken* in connection with the mines. Among the writers he cites are Widukind (10th century), the Monk of Lorsch, and Lambert of Hersfeld (1071).[11] It seems more probable to Hake that the new-comers were from this "*Francken* (Franconia) which lies not far from us,"[12] and he reminds the reader that Fichtelberg and Gold Kronach in eastern Franconia were at an early date, prosperous mining towns. Confirmation of the local tradition is seen in such names as that of the Frankenberger Kirche, still an important church of Goslar. Modern writers accept the tradition of an influx of foreign miners who came to teach their craft to the Saxons, but do not try to fix the locality from which they came. Neuburg thinks that the story deserves attention because of the wandering habits of all miners during the Middle Ages, and because *Francken* are mentioned in connection with the smelting-houses of Goslar as early as 1311.[13]

The Rammelsberg, the oldest mine in the Harz district, was on the imperial lands and the emperors conducted the business as landowners until the end of the eleventh century.[14] This regalian right made the mines for perhaps two hundred and fifty years the chief resource of the imperial exchequer at Goslar.[15] The mining industry soon spread a few miles south of the Rammelsberg to the Upper Harz mountains. Hake first mentions the mines in this locality in connection with Otto the Great,[16] and believed that they continued in operation during the greater part

[11] Hake, *Bergchronik*, 3, 27.

[12] *Ibid.*, 3, 39; Sebastian Münster, *Cosmographia, lib.* 3, *cap.* 371; Heineccius, *Antiquitates Goslarienses*, 19 ff.; and Calvör, *Historische Nachricht*, 15. (See p. 22 for addition to note.)

[13] *Op. cit.*, 13 n. 1. See also Ermisch, *op. cit.*, XI; Bode, *Urkundenbuch der Stadt Goslar*, I. 4; Arndt, *Zur Geschichte und Theorie des Bergregals*, etc., 20. Arndt suggests that these *Francken* originally gained their knowledge from Romans in the Rhine district. *Bergbau und Bergbau Politik*, 11.

[14] Zycha, *op. cit.*, 73.

[15] Neuberg, *op. cit.*, 10.

[16] *Bergchronik*, 3, 16; Ermisch, *op. cit.*, XII. Zeiller, in the *Topographia Braunschweig und Lüneburg* (1654) 68, and Honemann in the *Alterthümer des Harzes* (18th century) follow Hake in placing the event in the 10th century. Calvör in the *Historische Nachricht* discusses the question at some length, 16, 25, 52, 59, etc.

of the eleventh and twelfth centuries.[16a] However, the earliest documentary proof of the use of the mineral resources of the Upper Harz dates from 1271.[17] Even after that time the story of these newer mines is known only fragmentarily. Because of the lack of contemporary evidence for the existence of the Upper Harz mines before the thirteenth century it will be assumed that what Hake relates of an earlier period applies only to the Rammelsberg. This confusion may be partly explained by the fact that the associates of that mine obtained their fuel from the forests of the Upper Harz where they established smelting-furnaces.[18]

The Harz mines prospered from the start, and were profitable both for investors and miners.[19] Though a terrible famine and pestilence so depleted the population that the industry was entirely abandoned for ten years during the reign of Henry II, (1002–1024),[20] the following years proved a period of prosperity for the city of Goslar and the neighboring mines. Work recommenced in 1016; the old mines were drained, new mines built, and smelting developed.[21] This success lasted until the reign of Henry IV, (1056–1077) when there was a serious rising of the miners, caused, as the story runs, by the emperor's insult to the wife of his chief mine official.[22] Whether the tale is true or not, the time of Henry's wars with the Saxons marked a crisis in the history of the mines,[23] and coincided with a great exodus of miners. Henry V (1106–1125) repaired the damages of his father's reign and the work proceeded in peace until the time of Henry the Lion.[24] In 1157 the Emperor Frederick granted the Saxon duke the Harz forest as an hereditary fief and in the same year divided the Rammelsberg mine in equal parts between the monastery of Walkenried, the monastery of Saint Simon and Saint Jude, the

(Note for 16a on p. 22.)

[17] Günther, *Die Besiedelung des Oberharzes*, H. Z. 1884, 6; Günther, *Der Harz*, 61.

[18] Calvör, *Historische Nachricht*, 26, 27. See also Honemann, *Alterthümer*, 92.

[19] Hake, *Bergchronik*, 5, 20.

[20] *Ibid.*, 6. Crusius, *op. cit.*, 26; Calvör, *Historische Nachricht*, 55.

[21] Hake, *Bergchronik*, 7.

[22] *Ibid.*, 7 also Crusius, *op. cit.*, 44.

[23] Neuberg, *op. cit.*, 13; Hake, *Bergchronik*, 8, 1.

[24] Crusius, *op. cit.*, 48; Hake, *Bergchronik*, 9.

monastery of Saint Peter, and the city of Goslar.[25] In later years when the emperor and his greatest subject were at war (1181) Henry did serious damage to the mines and furnaces of the Rammelsberg and so frightened the people that "in twenty-eight years little that was fruitful was produced."[26] It was at this period (1170) that teamsters carrying salt from Halle to Bohemia by way of Meissen are said to have discovered lead in the district where Freiberg is now situated. They had the ore assayed in Goslar, and its fine quality led a company of miners from the Harz to migrate to the new fields. It is at least true that the mines in the Saxon Erzgebirge were first worked by miners from the Harz.[27]

The Harz district was destined to be the scene of yet another struggle for imperial supremacy, that between the rivals Philip and Otto.[28] This warfare was only a repetition of the old story, for all that had been rebuilt in the Harz regions since the time of Henry the Lion was again destroyed. The city of Goslar supported Philip and was taken and burned by Otto and his followers who were aided by the citizens of Brunswick. So great was the wealth of the conquered city, that it took eight days to carry off the plunder. In 1209 after the death of Philip, Otto once more started mining operations in the Rammelsberg.[29] He also visited the monastery of Walkenried in the Harz and confirmed its privileges, and its share in the mines and smelting-houses.[30] This share was probably the fourth of the Rammelsberg which had been granted by Barbarossa. After the death of Otto IV the peace made in 1218 between his brother Henry, the heir of the Brunswick lands, and the Emperor Frederick II inaugurated a period of one hundred and thirty years of growth and uninterrupted prosperity for the mines.[31] In 1235 Frederick created Otto the Child, a descendant of Henry the Lion,

[25] Calvör, *Historische Nachricht*, 19. Neuberg questions these gifts to monasteries, *op. cit.*, 17. The statement is found in Eckstorm's *Chronicle of Walkenried* (1617).

[26] The famous lion erected by Henry in the city of Brunswick was probably cast in a local furnace, though it may have been the work of foreign masters, H. Z. 1870, 307.

[27] Ermisch, *op. cit.*, XVI; Crusius, *op. cit.*, 61; Arndt, *Bergbau und Bergbau Politik*, 11.

[28] Hake, *Bergchronik*, 9, 42 ff.

[29] Calvör, *Historische Nachricht*, 55; Crusius, *op. cit.*, 78.

[30] Hake, *Bergchronik*, 11, 2 ff.; Neuburg, *op. cit.*, 18.

[31] Hake, *Bergchronik*, 12, 22; Crusius, *op. cit.*, 83.

the first duke of Brunswick-Lüneburg and gave one tenth of the income of the Rammelsberg mine to him and to his heirs.[32] The mines of the Upper Harz are not mentioned in the charter by which Frederick I granted the Harz forests to Henry the Lion in 1157, nor in that of Frederick II which created the duchy 1235.[33] Günther suggests that the miners driven from the Rammelsberg by the wars between Barbarossa and Henry the Lion, and later by those between Philip and Otto may have opened new mines in the Upper Harz forests where they were in the habit of smelting their ore.[34] The code *Jura et libertates silvanorum* issued in 1271 by Duke Albert the Great shows that one of the courts for the trial of mining cases held by the officials of Goslar was located in the Upper Harz,[35] while the division of property made by this same duke in 1279 mentions "the mine and forest of Claus in the Harz," and "the mine and forest of Zellerfeld in the Harz."[36] The conclusion is then that the Upper Harz mines first became important during the thirteenth century. The prosperity of the industry may be gauged by the extensive remains of ancient mines and furnaces visible in the sixteenth century.[37]

From this fragmentary outline it will be seen that there are tremendous gaps in our knowledge of the early history of the Upper Harz mines. Hake's emphasis is on the catastrophes which disturbed the peaceful development of the industry during this early period which ended some two hundred and thirty years before he wrote his history. Of the period between 1218 and 1347 he knew absolutely nothing.[38]

In 1347 the Black Death seems to have reached lower Saxony and put an end to all activities in the Upper Harz.[39] The district was not again of economic importance until the sixteenth century.

[32] Havemann, *Geschichte der Lande Braunschweig und Lüneburg*. I, 375; Neuburg, *op. cit.*, 40; Crusius, *op. cit.*, 83.

[33] Calvör, *Historische Nachricht*, 25.

[34] *Die Besiedelung*, etc., H.Z., 1884. The monastery of Celle, on the ruins of which Zellerfeld was built, may have played a part in opening these mines. It undoubtedly formed a religious center for the new settlements. *Ibid.*, 6, 10 and Hake, *Bergchronik*, 13.

[35] Günther, *Die Besiedelung*, etc. 6.

[36] Calvör, *Historische Nachricht*, 27.

[37] Hake, *Bergchronik*, 15 ff.

[38] For a detailed account of the Rammelsberg mine see *Goslar's Bergbau bis 1552* by Neuburg.

[39] Crusius, *op. cit.*, 144; Calvör, *Historische Nachricht*, 65; Hake, *Bergchronik*, 12, 24. It is possible that one reason that the mines were abandoned was from lack of wood. *Ibid.*, 15, 7.

CHAPTER III

The Mines of the Upper Harz Under the Duchess Elisabeth

1435–1520?

The Black Death which swept so disastrously across Europe in 1347 left the Upper Harz mines, which had enjoyed long years of prosperity, deserted and desolate. It was not until the fifteenth century that work was recommenced in this district.[1] The credit for renewing this industry which spelled economic prosperity for country and ruler, has long been given to the Duchess Elisabeth, of the house of Stollberg, the widow of Duke William the Younger of Wolfenbüttel.[2] Friedrich Günther has recently pointed out,[3] however, that some of the mines were in operation when she came as a widow to live in the castle of Stauffenburg, which had been left her by her husband. William the Younger ruled over the duchies of Göttingen, Calenberg and Wolfenbüttel, but in 1495 divided his lands between his sons, Henry the Elder of Wolfenbüttel and Erich the Elder of Calenberg.[4] This, the last partition made by the middle house of Brunswick, renewed the lines of Wolfenbüttel and Calenberg in a period when union rather than separation should have been the rule. There were more divisions in the duchy of Brunswick, than in any other German principality,[5] and the question of ownership is an intricate one for the boundaries were subject to constant shifting. As was customary, William, in giving his sons

[1] Hake, *Bergchronik*, 12; 32. Calvör, *Historische Nachricht*, 65 says that he could find no evidence that the Upper Harz mines were worked between 1349 and 1524.

[2] Elisabeth von Stollberg (1435-1520?), of the middle house of Braunschweig-Lüneburg. Havemann, *Geschichte der Lande Braunschweig und Lüneburg*, 499.

[3] *Die Grundung der Bergstadt Grund*, H. Z., 1906, 16.

[4] *Ibid.*, 23; Heinemann, *Geschichte von Braunschweig und Hannover*. II, 217.

[5] The map of Germany during the Reformation period, in Spruner's *Hand Atlas*, Gotha, 1854, shows Brunswick divided into the lesser duchies of Lüneburg (Celle), Calenberg, Wolfenbüttel, Göttingen and Grubenhagen. Wagner, *Corpus Juris Metallici*. XXIX. As early as 1279 Duke Albert the Great of Brunswick had divided the Upper Harz mines and forests among his three sons.

their shares arranged that they were to control the mines jointly.[6] This, with other proofs, leads Günther to the conclusion that mining in the Upper Harz, in the Iberge and Grund was in operation by the year 1450. Zeiller also gives the credit for reopening the mines in the Iberge to William the Younger.[7] Hake is the only contemporary witness of what Elisabeth's activity was. He writes: "Her Grace being informed that there were in the neighborhood old passages and especially iron mines which had been used by the early workers, aspired to bring them once more into use. But because her Grace lacked steelsmiths, and as there were none in the principality, she imported some from Stollberg and its environs and also from around Ellrich."[8] Günther's ingenious interpretation is that instead of actually beginning the mining industry, she introduced a new branch, the making of steel.[9] Presently the Iberge, Grund, and Gittelde became the scene of prosperous activity. Though iron was the chief output, silver also was mined as in the old days, but without great profit.[10] The iron mines of the Iberge grew and in a few years had developed a good business which was directed by Elisabeth's chancellor. For this reason the warehouse in Gittelde was called the "Cantzeley." Martin Zeiller, writing in 1657, says that the factory in Gittelde was still standing, and that very good iron was made from the ore. He adds, without giving a date, that the rush of miners and smelters to Grund was so great that the town soon needed a judge and council. An index to the increased population drawn to the Harz by the popularity of the mines is found in the fact that in 1505 Elisabeth established an independent church in Grund which until then had been dependent on the church of Gittelde.[11]

Elisabeth was in close touch with her people and it is interesting to note that in her kindliness she renounced the heriot, the good horse to which she was entitled on the death of a householder and the cow which at the death of his wife was hers by right.[12] The duchess herself came often to Grund for the sake of the natural

[6] Wagner, *op. cit.*, XXVIII; Heinemann, *op. cit.*, II, 218. Here lies the explanation of the expression "Kommunion Harz."

[7] *Topographia Braunschweig und Lüneburg*, 107.

[8] Hake, *Bergchronik*, 32, 13 ff.

[9] Günther, H. Z., 1906, 19.

[10] Hake, *Bergchronik*, 33, 5; 36, 3.

[11] Günther, H. Z., 1906.

[12] Hake, *Berchronik*, 34, 19.

warm springs of the neighborhood which were "like medicine to help poor miners and many other people." As the chronicler says: "She planned for her people as the mother for the house," but her private life was saddened by such hard personal losses that he adds quaintly "she sat in no rose garden." At her funeral she was extolled by the Pastor of Alshausen as

Mater et nutrix ecclesiae
Cum magna devotione
Fautrix clericorum,
Inventrix metallorum,
Paupertatis consolatio,
Viduarum recreatio
In Domino obdormivet,
In tumulo habitat,
In pace requiescat.[13]

[13] Rehtmeier, *Braunschweig-Lüneburgische Chronica*, 770.

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[9] Hake was misled into telling this story because of a confusion of geographical terms. German chroniclers in the eleventh and twelfth centuries employed the word 'Francia' or 'Frantia' frequently to designate Franconia, and did *not* mean France. Cf. Lambert of Hersfeld, *Annales*, ed. Holder Egger, 274, 5; Otto of Freising, *Chronica*, ed. Hofmeister (1912), 25, 15; 224, 30; 226, 5; 231, 35; 233, 5; 236, 5; 240, 25; 241, 15; 242, 35; 244, 1; 245, 35; 247, 30; 249, 15; 254, 20; 262, 1; 279, 1. See also Waitz, *Deutsche Verfassungsgeschichte*, V, 161–65.

Page 16, add to note 12:

Rübel, *Die Franken*, and J. Müller, *Frankencolonisation auf dem Eichsfelde* (1911), have done much to elucidate this subject in recent years.

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[16a] The evidence for this statement is inferential, but is justified by an examination of the fiscal policy of Henry III and especially Henry IV, who probably contemplated establishing a fixed capital at Goslar, a purpose which was frustrated by the rebellion of 1075 and the protracted anarchy in Germany which ensued. See Gebhardt, *Handbuch der deutschen Gesch.* (1891), I, 310, and more fully Nitzsch, *Deutsche Geschichte*, II, 45–47; 352–60. Goslar originally pertained to the house lands of the Ludolfinger dukes of Saxony, whence came Henry I and the Saxon house.—Eggers, *Der königliche Grundbesitz* (1909), 60–61. The appropriation of Goslar by the Franconians was one of the grounds of feud between them and the Billunger dukes of Saxony in the eleventh century. Goslar was formed by a union of three villages, of which the colony of miners at Rammelsberg was the oldest. Its first chartered privilege dates from Frederick II in 1219.

CHAPTER IV

Henry the Younger of Brunswick-Wolfenbüttel
1489–1568

The enterprises which Elisabeth left in such good condition were carried on by her grandson. One of her many griefs had been the early death of her oldest son, Henry the Elder in Friesland, (1514), where he was fighting in behalf of the city of Bremen.[1] In 1510, recognizing the evils attendant upon dividing the duchy into small holdings, Henry had made an arrangement, probably not written, by which his entire inheritance should pass to his oldest son.[2] In spite of this his six sons at his death made a compact in which the four oldest, who held preferments in the church, renounced their claims in favor of Henry, called "the Younger." William, the youngest, was the only one who demanded either a division of the lands or a joint rule and proved so troublesome that Henry thought him safest in prison where he was detained twelve years. In 1515 the two brothers finally drew up a formal contract[3] by which they assumed their father's debts and recognized the principle of primogeniture. The younger, William, swore allegiance to Henry, and for his share of his father's estate had to be satisfied with the castle of Gandersheim and 2000 gulden a year. This arrangement was confirmed by the Emperor Charles V (1539). Thus Henry inherited from his father "land and people, castles, cities and grounds and the mine on the Rammelsberg with all belonging to it." Even in that hard age Henry's lack of fraternal feeling drew upon him the criticism of some of the princes of his own Catholic party and proved the source of future trouble.[4]

Henry's self chosen motto *Meine Zeit mit Unruhe* epitomizes the story of his long life. Before the inheritance compact among the brothers had been completed, Henry was embroiled in the

[1] Heinemann, *op. cit.*, II, 227.
[2] *Ibid.*, II, 335.
[3] Rehtmeier, *op. cit.*, 886. The compact was renewed in 1517.
[4] Köll, *Henri le Jeune, et la Réforme*, 36.

feud which broke out in 1516 over the lands of the bishop of Hildesheim.[5] The bishopric had been mortgaged in the past to meet the expenses of extravagant bishops and of war, and John chosen bishop in 1504, planned through strict economy, to buy them back. However, the occupants had come to look upon these lands as their own and when their tenure was threatened they called upon others of their class who might in future share the danger. Of this number were Erich of Brunswick-Calenberg, Henry the Younger and his brother William. On the other hand, Henry[6] of the line of Brunswick-Lüneburg was of the bishop's party. The feud reached its climax when in June, 1514, at Soltau the bishop's allies won and Erich and William were taken prisoners. The *Reichsregiment* had twice bidden the contestants lay down their arms, but it was not until after the imperial election that Charles V punished this long, flagrant breach of the Peace of the Land by placing the bishop of Hildesheim and Henry the Mittlere under the ban of the Empire. Erich had been right, however, when on hearing the results of the election he exclaimed: "If Charles of Ghent is chosen emperor, the princes of Brunswick have gained more than they have lost,"[7] for Erich and Henry the Younger were deputed to carry out the ban. Further, by the Peace of Quedlinburg (1523), each party kept what it had. The bishop's portion surrounding the city of Hildesheim was from this time known as the "Small Bishopric." The rest was divided between the dukes of Brunswick and Henry received castles cities, monasteries—a notable addition to his territories. Years later, in 1540 the pope demanded restitution, but in 1559 Emperor Ferdinand confirmed the grant of the conquered bishop's lands to Henry and Erich. This was repeated by Maximilian II in 1565[8] and restitution was not made until 1642.

Of even greater importance to Henry than the territorial gain, was the alliance thus formed between the young emperor and the young duke who were but carrying out the tradition of their families. At this time, in addition to ruling over greater territory than has often fallen to the share of one man, the young Hapsburg

[5] Heinemann, *op. cit.*, II, 275 ff.

[6] der Mittlere.

[7] "Ist Karl von Gent zum Kaiser erkoren, so haben die braunschweigischen Fürsten mehr gewonnen als verloren."

[8] Rehtmeier, *op. cit.*, 938, 946.

had just succeeded in gaining the election to the highest secular office. Though ruler and subject were destined to lead stormy lives, policy induced them to continue the early friendship.

From the time of the Diet of Worms the religious question held the center of the stage in the Empire. Henry of Wolfenbüttel never wavered in his allegiance to the emperor, but followed his lead in religion as in war. Personally he was not religious, but saw the political value of remaining in the Catholic church. His priests complained that though "a good papist, Henry had no compunction in taking away what they had scraped together, and leaving them only chimes and chants." His utter failure to comprehend what religion might mean to an earnest, unworldly man is shown in the advice which he gave to Charles at the Diet of Augsburg in 1530: "As far as taking the sacrament in both kinds or the marriage of priests is concerned, I wouldn't bother to saddle my horse over the question."[9] Nevertheless, the Peasants' Revolt of 1525, brought Henry the Younger into conflict, for the Harz district was swept by the insurrection, and much property, especially that of monasteries was destroyed. The outrages connected with the taking of Walkenried were such that religious differences were forgotten for the time and the princes as a class united against the peasants for the purpose of protecting their property and restoring order. Duke George of Saxony, Philip of Hesse, the count of Mansfeld, Otto of Lüneburg and Henry the Younger armed and met the peasants at Frankenhausen in Thüringia (May 25, 1525). The latter were miserably slaughtered and as a result of the battle lost their leader Münzer. As he lay dying, Duke Henry, that the peasant leader might not lose his soul, recited the creed to him "clearly and with a harsh voice."[10] Like most Catholics Henry was becoming more and more prejudiced against the teachings of Luther whom he blamed for the peasant rising. The chronicler of the mines is silent concerning this uprising, and the lack of evidence indicates that work was not interrupted.

Even before the Peasants' Revolt Henry's ambition brought him into serious difficulties with the imperial city of Goslar, which

[9] Havemann, *op. cit.*, II, 221. "Wegen geniessung des Sacraments, wegen Pfaffenweiber und desgleichen Sachen möcht ich mein Pferd nicht satteln."

[10] Heinemann, *op. cit.*, II, 337 ff.

since the partition of the Hildesheim lands had been entirely surrounded by Henry's possessions.[11] The duke's relations with this prosperous city were peculiar, and their origin must be sought in the settlement of the bitter Guelph-Hohenstaufen struggle. In 1235 Frederick II made Otto the Child, grandson of Henry the Lion, the first duke of Brunswick-Lüneburg and granted him the annual tenth of the income of the Rammelsberg mine which had belonged to the Empire and carried with it jurisdiction and sovereignty over the mine.[12] The Rammelsberg is "a fairly large mountain, lying south of the city of Goslar, almost grown over with woods, heather . . . and other shrubs, and appears an unfruitful mountain; before it there are no other mountains, but behind (south) it rise the Harz."[13] This tenth of the Rammelsberg mine was mortgaged in the thirteenth century by the dukes of Brunswick to a private citizen, Hermann von Gowisch.[14] By 1379 this fief had come under the control of the city council of Goslar and the alderman, although the dukes retained the privilege of buying back the mortgaged property, exercised the rights of sovereignty over the mines until the beginning of the sixteenth century.[15] This practical ownership lasted until the time of Henry the Younger who aimed to bring the valuable property entirely under the control of his house. In spite of this ambition he made an agreement with Goslar in 1518 by which he promised to protect the city in its possession of mines, smelting-houses and forests for eight years.[16] The feeling between duke and city was strained, however, by the duke's demand for men and money to help him enforce the ban against the bishop of Hildesheim. The city had wished to remain neutral. Perhaps his success in the matter of the Hildesheim lands had turned Henry's head a little. At any rate, in 1525, he announced to the city council his intention of buying back the forests, the tenth, and the jurisdiction over the mine which had been granted with this proviso by his forefathers.[17]

[11] Heinemann, *op cit.*, II, 344.

[12] Heineccius, *op. cit.*, II, 250; Neuburg, *op. cit.*, 33.

[13] Zeiller, *op. cit.*, 169.

[14] Neuburg, *op. cit.*, 60., n. l.; Calvör, *Historishe Nachricht*, 27.

[15] Neuburg, *op. cit.*, 140 ff.

[16] Crusius, *op. cit.*, 218.

[17] Heineccius, *op. cit.*, II, 446; Cranzi, *Vandaliae et Saxoniae*, 232. Henry the Elder, father of Henry the Younger intended to buy back the mortgaged tenth, but never succeeded. See Günther, *Der Harz*, 199.

The citizens, though unwilling, seem to have yielded the tenth, while retaining such sovereign rights as that of jurisdiction and the right of leasing holdings in the mine.[18] To grant Henry's claims would have left Goslar no territory outside the city walls and no interest in the mine, so in self-defense the council turned to Charles V. Their petition was granted, but instead of obeying the mandate of restitution (March 23, 1526) Henry fortified the monastery of Riechenberg, raised the price of wood and charcoal, turned the water from the smelting-houses, stole ore as it was being transported, and harassed the people of Goslar in every possible way.[19] So intolerable was their position that in 1530 they again appealed to the Diet, then in session at Augsburg. In 1528, however, by introducing the Lutheran form of worship into Goslar,[20] the burghers had so displeased the emperor that instead of enforcing his edict of 1526, he left the matter to the imperial court and threatened with the ban any partisan who should disturb the perpetual peace.[21] The Landgrave Philip of Hesse had promised to help Henry but in 1531, Goslar, by joining the League of Schmalkald gained the right to his protection; so Henry was forced to do without Philip's assistance.[22] Thus the quarrel dragged through long years, becoming inextricably involved with the religious question. The decision which put the city under the ban (1540) was withdrawn in 1541.[23] Amid the general confusion Goslar evidently regained control of the Rammelsberg mine, for the ordinances which the city issued in 1539 and 1544[24] indicate that its authority was complete, at least on paper. Henry continued fighting in spite of the Edict of Regensburg of 1541, and the period of his exile and imprisonment by the Protestants (1542–1547) must have brought a welcome respite to his enemies. As soon as he was set free trouble recommenced. In 1551 Charles V came to the aid of Goslar but too late to save the city. In the archives of Wernigerode has been found a command

[18] Günther, *Der Harz*, 199. In 1527 Henry with the help of the cities of Magdeburg and Brunswick paid Goslar 24,663 Rhenish gulden. Neuburg, *op. cit.*, 319.

[19] Crusius, *op. cit.*, 222.

[20] Hölscher, *Die Geschichte der Reformation in Goslar.*

[21] Neuburg, *op. cit.*, 142.

[22] Köll, *op. cit.*, 21.

[23] Neuburg, *op. cit.*, 143.

[24] Wagner, *Corpus Jurus*, 1045, 1049.

of the emperor dated May 13, 1551, at Augsburg,[25] ordering the princes of the neighborhood to protect the city against Henry. They were to allow free passage through their dominions for wood, charcoal and other things needed for the mines and furnaces of Goslar. In 1552 Henry besieged the city and the Riechenberg agreement of June 13 of that year marks his final success.

His victory gave Henry the sovereign right of preëmption of all silver, lead and other metals produced by the Rammelsberg, as well as a tenth of all its output. He also gained jurisdiction over the mine property which included the right of making its laws.[26] His ordinance of 1552 shows that he took the reins at once. For centuries the Grubenhagen line had controlled a part of the mine, and this half Henry never actually owned though it was leased to him with the proviso that his tenure should be permanent.[27]

It was probably Henry's policy to interfere as little as possible with the actual running of the mine and the organization as outlined in his first code did not differ materially from that in the last ordinance issued by the city council in 1544.[28] In the latter the ruler was acknowledged by the grant of one thirteenth, at that time his rightful share of the output of the mine, but the council exercised the sovereign right of jurisdiction. To the city fathers belonged one ninth of the ore, while the associates shared according to their holdings. This code, like that of 1494, illustrates that phase in the history of the Rammelsberg mine, during which the city council controlled a considerable share in the mine association.[29] The head official was the overseer. He was assisted by eight skilled miners who were responsible for the administration

[25] Published in H. Z., 1884, 321.

[26] Wagner, *Corpus Juris*, 1057; Neuburg, *op. cit.*, 320.

[27] Wagner, *op. cit.*, XXVIII, 1065. Through the dying out of the Grubenhagen line in 1635 this became part of the Bergwerks-Kommunion. It is significant that in his will (1582) Julius, the son of Henry, speaks of the debts left by his father and attributes them to his costly wars and this purchase of the mine. Rehtmeier, *op. cit.*, 1040.

[28] This ordinance of 1544 is published by Wagner, *op. cit.*, 1049, and discussed by Neuburg, *op. cit.*, 336 ff.

[29] Neuburg, *op. cit.*, 335-36. The Sechsmänner no longer shared in the administration, but acted as guardians and judges.

and condition of the mine, gave permits for new building and inspected the measurement of the ore every four weeks. The city council with the associates established the rate of wages and forbade any associate or owner of a smelting-house to raise the price of such supplies as wood and charcoal without giving notice. Of the lower mine officials the ordinance mentions by name only the secretary and inspector. A court which was in session four times a year settled all disputes in accordance with mine law. Very striking are the regulations which governed the ownership of shares in the Rammelsberg and in the neighboring smelting-houses. Only citizens of Goslar might hold such property and they must have the consent of the council, gilds and people of the city. Any shareholder removing from the town had to sell his holdings within two years, while anyone inheriting such property had either to move to Goslar or sell his share to a burgher of that city.

In his ordinance of 1552 for the Rammelsberg[30] Henry's object was to repair the damage wrought by his struggles with Goslar, and bring the "mines and smelting-houses once more into activity." In the main he recognized existing conditions for he chose officials who understood the situation in the mine and possibly left many of the old incumbents undisturbed. The all important diffierence was that the income now went to the duke instead of to the city council, and the laws seem to have been chiefly concerned with seeing that he got his rights. All officials were in the duke's service and their offices were essentially those which existed under the administration of the city. They probably enforced old laws in such matters as disputes between workmen, length of shifts and ways of working. These officials made weekly reports of the output. The duke established the price of the metal which was refined at the smelting-houses operated in connection with the mine. Owners of these houses and the associates paid a tax for wood, charcoal and water. The privileges connected with the mine no longer belonged exclusively to citizens of Goslar but were open to all. Henry, in order to attract workers, introduced the privileges enjoyed in the Upper Harz into the Rammelsberg, offered to loan capital to those wishing to operate mines or smelting-houses,[31] and not only put in operation the galleries which had

[30] Wagner, *op. cit.*, 1058.

[31] Neuburg, *op. cit.*, 320. Such loans from the profits of the mines were customary in the Upper Harz and in Saxony.

been constructed by the council earlier in the century, but had many new ones built. During his reign 156 fathoms in all were dug, each fathom representing from two and a half to three weeks of time, and a cost of 65 *Reichsthaler*. The enlargement of the mine ceased here because, as the duke said: "We put in galleries and do not live to see the outcome."[32] This exploitation by the duke was necessary because even the privileges he offered failed to attract investors in sufficient numbers. This change in ownership and in the principles on which the mine was conducted, marked the end of its most prosperous, most interesting period.

Naturally Henry's dispute with Goslar made itself felt in the duke's mining towns of the Upper Harz, only a few miles from the Rammelsberg. Hake's entry for the year 1542[33] tells of the fear in which the miners lived of attacks from the Schmalkald League and from Goslar, both enemies of their imprisoned lord. Goslar from the first had been jealous of these new towns which in the future might prove formidable rivals. Her quarrel with Henry gave the opportunity, only too eagerly grasped, "to pull a feather" from the mine cities. An attack on Zellerfeld was made by a company of three hundred from Goslar in spite of the fact that the mining towns had been forced by the fortunes of war to swear allegiance to the Schmalkald leaders. The neighbors of Zellerfeld, Wildemann, Gittelde und Grund also suffered in the same way.

Henry's quarrel with Goslar over the Rammelsberg had broadened until it became part of the great religious struggle of the century. The way in which the religious disputes colored politics may be seen from the following verses of the "Poem wherein it is shown how pure is Duke Henry of Brunswick and how wicked are Lutherans," written about 1540.[34]

Wider diesen untreuen Mann
Goslar kein recht erlangen kann
Auskeiner andern Sachen nit,
Denn dass sie sind lutherisch mit;
Denn die lutherischen Knaben
Müssen allzeit unrecht haben,
Wenn sie auch gleich gehorsam sein

[32] Neuberg, *op. cit.*, 219; Hake, *Bergchronik*, 59, 6.
[33] *Ibid.*, 48.
[34] Published by Koldewey, *Heinz von Wolfenbüttel*, in V.R.G., 1883, 18.

Gott dem Herrn und ihrem Kaiser fein,
Allezeit müssen haben recht
Papst, Mönch, Pfaffen, und ihre Knecht;
Wenn sie gleich wider Gott leben,
Auch wider des Kaisers Gesetz streben.
So ist's ihnen alles vergeben,
Wenn sie nur den Papst erheben,
Wider den Luther heftig reden,
Über Gott und sein Wort schweben.

After the formation of the Catholic League in 1538 the leaders more than ever held themselves ready for war. Soon after this the Lutheran princes seemed at their strongest. The successors of George of Saxony, Henry and his son Maurice joined the League of Schmalkald, while Joachim II of Brandenburg also put himself on the reforming side. Alone in north Germany, Henry of Brunswick remained true to the faith of the emperor. At this time both sides indulged in the bitterest invectives expressed in pamphlets which the printing press scattered broadcast over Germany. The enmity against Henry of Brunswick was increased by the failure of his private life to meet even the lax standards of the day. The long imprisonment of his brother William, his disregard of justice in the Dellinghausen affair, his intrigue with Eva von Trott, all told against him. So unpopular was he that at the Diet of Regensburg where Charles was beset with complaints against his faithful vassal, some of the princes even refused to shake his hand.[35]

The Peasants' Revolt of 1525, for which many held the teach- of Luther responsible, so strengthened Henry of Brunswick in his opposition to the new religion, that in June of that year with Archbishop Albert of Mainz and Magdeburg, the Elector Joachim of Brandenburg, George of Saxony and Erich of Calenberg, he formed a defensive alliance against the Lutherans.[36] It was Henry of Brunswick who was sent to Seville to beg the protection of the Emperor Charles for this union. Further proof of the duke's allegiance to his sovereign was given in 1528 when with a thousand of his own soldiers he took part in the siege of Lodi.[37] Henry's loyalty was tested in the matter of the Würtemburg lands, which the emperor had confiscated after their owner, Duke Ulrich had

[35] Heinemann, *op. cit.*, II, 349, 359.
[36] *Ibid.*, II, 340.
[37] *Ibid.*, II, 341.

been expelled by the Swabian League.[38] Henry's jealousy of the rights of his class brought about his alliance with his friend Philip of Hesse for the purpose of restoring the possessions of the injured prince (April 1530). Ulrich was Henry's brother-in-law; moreover Philip promised the return service of helping the duke of Brunswick in his difficulties with the city of Goslar, but when it came to the point Philip was not willing to risk an open defiance of the emperor.[39] At the end of 1530, the defensive League of Schmalkald was formed by the Protestant princes, and in 1538 at Nuremberg, the Catholic emperor, with the elector of Mainz, the dukes of Bavaria, the archbishop of Salzburg and Erich of Brunswick united against them. Henry of Brunswick acted as leader in northern Germany.[40] In 1539 the Protestant strength was vastly increased by the accession of Saxony and Brandenburg. This left Henry the only Catholic prince in the northern part of the Empire and made him feel that he "was surrounded by dogs and must be ready for daily slaps on the face."[41] He was already at odds with Philip of Hesse because on December 30, 1538, the latter had read the private despatches of Henry's messenger, Stephen Schmidt. From this time dated the bitter war of pamphlets which lasted for several years, during which Henry and the Protestant leaders tried to outdo each other in calling names and making accusations. In these verses where the intense personal feeling on all political, religious and social matters found unrestrained expression, is seen the opposition estimate of Henry's character.[42] Their accuracy is of course, not to be trusted. Even Luther did not hesitate to soil his pen in this degrading give and take, and wrote his famous pamphlet "Wider Hans Worst." The coarseness of this exchange is indicative of the low standards of the period; unfortunately Henry's private life as well as his public career offered many vulnerable points for attack.

At the Diet which opened in Regensburg in April, 1541, all difficulties which had come up between Henry and the League of Schmalkald were to be considered.[43] Goslar and Brunswick,

[38] Armstrong, *The Emperor Charles V*, I, 49.
[39] Heinemann, *op. cit.*, II, 344.
[40] Koldewey, *op. cit.*, 7.
[41] Heinemann, *op. cit.*, II, 353.
[42] Many of these verses are published by Koldewey, V. R. G., 1883, also in the Z. N. S., 1850.
[43] Koldewey, *op. cit.*, 21.

both members of the league had their complaints; moreover Henry was supposed to be the instigator of the mysterious fires to which Protestants in his dominions were subject.[44] Then it was, that because of the duke's reputation many of the princes refused to shake hands with him. In April Luther's pamphlet against Henry was circulated at Regensburg, its stinging words being directed against his adultery, his treatment of Dellinghausen, and his devotion to the Catholic party.[45] The emperor was in a difficult position for he wished to stand by his faithful subject, yet needed Protestant support against the invading Turk. Nothing was accomplished; affairs between Henry and the Protestant league were only made worse by the Diet, while the prince's disputes with Goslar and Brunswick were not settled for another ten years.

These quarrels developed soon after the Diet of Regensburg, until prince and burghers were practically at war. At length the leaders of the League of Schmalkald, the landgrave of Hesse, and the elector of Saxony determined to come to the assistance of their allies, and in July 1542, invaded the duchy of Brunswick.[46] Henry had no strength for fighting and fled to the Catholic duke of Bavaria for assistance. Wolfenbüttel, the best fortified city of Henry's lands was the only one to offer any resistance, but on the twelfth of August even this stronghold was taken by the Protestants. The precipitate flight of Henry gave rise to another crop of more or less scurrilous verses whose point was made at his expense, and left the Protestant leaders in possession of the duchy of Brunswick. The evangelical form of worship was established throughout the duke's dominions, for religious interest was far from having been obscured by political ambition.[47] The duchy, surrounded as it was by Lutheran influence, received without friction the church ordinance issued by the League of Schmalkald in 1543. The problem of the government of the territory was more difficult. The victors considered placing

[44] Rehtmeier, *op. cit.*, 898.

[45] Koldewey, *op. cit.*, 25.

[46] Issleib, *Philipp von Hessen, Heinrich von Braunschweig und Moritz von Sachsen.* Jb. G. V. B., 1903. The agreement, dated Naumburg, October 26, 1541, between Elector John Frederick, Maurice and Philip of Hesse to invade Henry's lands is published by Brandenburg, *Politische Korrespondenz des Herzogs und Kurfürsten Moritz von Sachsen*, I, no. 228.

[47] Heinemann, *op. cit.*, II, 363.

one of Henry's sons in power, but this and various other plans were discarded in favor of a council, resident at Wolfenbüttel. This council was headed by two governors, the Saxon Bernhard von Mila and the Hessian Henry Lersener, and was made up of an equal number of Saxons and Hessians.[48]

Meanwhile Henry left no stone unturned which might help him to regain his lands. The emperor was not willing to antagonize the powerful Protestant princes whose help he needed by taking a definite stand in Henry's favor. Nor did the Catholic dukes of Bavaria do anything in the matter. The question of the Brunswick lands was of imperial importance, and was discussed in the diets held at Nuremberg, Regensburg, Speier and Worms (1543–45).[49] Henry went as far as Cremona to meet the emperor and accompanied his train to Brussels hoping thus to curry favor and eventually to regain his lands. The duke was still in the entourage of Charles when he presided at the Diet of Speier in 1544. At this juncture the Peace of Crépy made with Francis I, freed Charles so that he could attend to German affairs. At the Diet of Worms (1545), in spite of Henry's protests, the Brunswick lands were declared sequestered, and the emperor put them under the control of the elector of the Palatinate and the Landgrave Hans of Simmern.[50] Obviously Henry could not now expect that his lands would be restored by legal means; his only hope lay in the attempt to regain them by force. Since he could not obtain allies he determined to help himself, and with the aid of French gold raised an army with which in the fall of 1545 he entered his dominions. He conquered, and proceeded as far as Wolfenbüttel, and once more the mass was celebrated in Brunswick. When the news of his progress reached the Protestant leaders, Philip of Hesse aided by Maurice of Saxony advanced against Henry, meeting him at Höckelheim in the neighborhood of Northeim. Maurice was loath to fight and tried to bring about some sort of peaceful agreement, but Philip made impossible demands asking

[48] Koldewey, *op. cit.*, 55; *Die Reformation des Herzogthums Braunschweig-Wolfenbüttel . . . 1542-1547.* Z. N. S., 1868, 250.

[49] Koldewey, *Heinz von Wolfenbüttel*, 58. The absorbing interest of the question of the Brunswick lands to the Protestant leaders of north Germany from 1542 until 1547 may be seen in the *Politische Korrespondenz des Herzogs und Kurfürsten Moritz von Sachsen*, published by Brandenburg.

[50] Heinemann, *op. cit.*, II, 371 ff.

Henry not only to restore the evangelical form of worship but to give himself up as a prisoner.[51] Of course these were refused.[52] In the end Maurice, angry at Henry's rejection of these peace offers, decided to fight. Henry was not strong enough to win the battle, and because he could not pay his troops he feared that they might take revenge on his person. So as a bitter alternative, the duke with his son Karl Victor gave himself a prisoner to Maurice and was taken by his former friend to Ziegehain in Saxony (October 21–22, 1545). Although Brandenburg estimates this as a mere episode in the greater party quarrels of the Reformation he says: "We must recognize in it an important link in the chain of cause and effect which brought about in the years following the great downfall of the Schmalkald League."[53] The imprisonment of Henry was the signal for a fresh crop of pamphlets against him. Luther, in his circular letter to the elector and landgrave, wrote his last word concerning the Catholic leader speaking of the capture of "den Heintz von Wolfenbüttel" as a blow to the pope and the whole body of the papacy.[54]

It was the trend of the Schmalkald War which finally set Henry and his son free after nearly two years in prison. After his victory at Mühlberg (1547), the emperor made Henry's release a condition of his settlement with Philip of Hesse. Henry and Philip also reached an agreement on June 14, 1547, in which the former promised not to persecute any one within his dominions on religious grounds. His subjects were released from their oaths to Philip and John Frederick, and Henry returned to the possession of his inheritance. With the aim of wiping out all traces of the foreign occupation the duke rebuilt his capital, Wolfenbüttel,[55] reorganized his mines,[56] and under the influence of the Interim of Charles V, proceeded to restore the Catholic

[51] Brandenburg, *Der Gefangennahme Heinrichs von Braunschweig*, 36.

[52] *Ibid.*, 46. The prince "wölten fur ire person frey sein, bey dem alter christlichen glauben und religion zu pleiben und des conciliums erklerung deshalben zu gewarten."

[53] *Ibid.*, 67, 72. For another interpretation of these events see Issleib, *op. cit.* Also Wolf, *Zur Gefangennahme Heinrichs von Braunschweig*, Archiv für Sächs. Gesch., 1905.

[54] Koldewey, *Heinz von Wolfenbüttel*, 65.

[55] *Ibid.*, II, 377; Heinemann, *op. cit.*, II, 376, 377.

[56] Hake, *Bergchronik*, 54, 40 ff.

worship. Little resistance was made, though the city of Brunswick of course remained Protestant.[57] As Rehtmeier says: "Thus was Henry the Younger after his imprisonment a mighty and rich lord, head of the lower Saxon circle, knight of the Golden Fleece, and on all sides held in great esteem." But Henry's motto still held true, for there was as yet no peace for him. In 1552 his lands were most disastrously invaded by Count Wolradt of Mansfeld, and directly afterwards he became involved in much more serious complications with Albert of Brandenburg. This last named prince after helping the emperor at the siege of Metz, wantonly plundered the bishoprics of Würzburg and Bamberg.[58] To check him, King Ferdinand, Maurice of Saxony and Henry of Brunswick formed an alliance in May 1553. Albert, counting on help from the many enemies of Henry of Brunswick and hoping to effect a union with Erich of Calenberg, started toward north Saxony, plundering and burning as he went. On the 18th of June, the intruder succeeded in entering the town of Brunswick which was still at odds with its duke. Thence he occupied Hanover and harried the bishopric of Minden. The members of the league united and advanced on Albert who tried to reach the city of Brunswick in safety. He failed and the armies met on July 9, at Sievershausen, about half way between Brunswick and Hanover. Here Albert was worsted, but at a terrible cost, for Maurice of Saxony was killed and Henry of Brunswick received the severest blow of his long, hard life in the death of those congenial fighting comrades, his two oldest sons. This victory and the death of Albert a few years later left Henry the most powerful of the north German princes. He took advantage of his position to make peace on favorable terms with his rivals and enemies.[59]

Among Henry's enemies were numbered not only Goslar and the Protestant league, but his own city of Brunswick which aspired to become politically independent. Closely bound with the political, was the commercial aspect of the quarrel. The constant friction which resulted from the attempted control by the Catholic duke of the Protestant burghers only made matters worse.

[57] Koldewey, *Heinz von Wolfenbüttel*, 67; Köll, *op. cit.*, 85.

[58] Rehtmeier, *op. cit.*, 917 ff; Hake, *Bergchronik*, 59, 36; Heinemann, *op. cit.*, II, 382.

[59] *Ibid.*, II, 385, 391.

The disputes and bickerings more or less acute between Henry and the most powerful city within his dominions were no new or uncommon thing. They lasted until the year of Sievershausen (1553), when the Great Treaty was signed. Brunswick had long aspired to independence and during the thirteenth century had made three attempts to break away from its dukes and become a free imperial city.[60] During the fourteenth and fifteenth centuries the dukes who were weak and often creditors of the city were forced gradually to increase its privileges until it was treated almost like a free city. It was a member of the Hanse and in 1507 was cited to the Diet of Constance.[61] Henry the Elder (1491–1514), the father of Henry the Younger, tried to make the town dependent on him, but was circumvented by the appeal of Brunswick to the emperor. In the treaty of 1494 the city did indeed pay homage to its duke but received in return substantial privileges. Four years later he was force to grant the citizens two free markets, and in 1506 the right of protecting the Jews. After his death the city took the oath of allegiance to Henry the Younger without protest (July 1515) and in return the new duke granted the privileges given by his father.[62] In payment of a loan the duke was forced to allow the citizens of Brunswick an old right, that of trading free of customs throughout the duchy. During the period of the Hildesheim feud the city gave Henry an army on the promise of one half the booty.[63] In 1521 the Emperor Charles confirmed to the city the privilege of holding two free yearly markets which had been granted by Henry the Elder and Maximilian.[64] Relations with the duke must have been friendly in 1525, for in that year the city stood sponser for his son Karl Victor. The city and the duke were united against the Lutheran teaching during the Peasants' Revolt and when Henry left the country soon afterwards he bade the council of Brunswick "look after the welfare of his duchy." Against the spirit of their promise the city fathers introduced the Reformation while Henry was in Italy with the emperor. The ruler returned in July, 1528, to find

[60] Hassebrauk, *Heinrich der Jüngere und die Stadt Braunschweig.* Jb. G. V. B., 1906, 1.

[61] *Ibid.*, 12.

[62] *Urkundenbuch der Stadt Braunschweig*, 291. This oath in the same Low German form may be traced back to 1400.

[63] Hassebrauk, *op. cit.*, 11.

[64] *Urkundenbuch der Stadt Braunschweig*, 295.

the change an accomplished fact, in Brunswick as in Goslar.[65] In answer to the complaint of the duke and the emperor the city claimed that the duke's rights had never been interfered with and that anyone so desiring might attend Catholic service. When in 1531 Henry made the Augsburg regulations binding on all the land, the council and people of the city of Brunswick refused to accept the ruling and the friendship between the duke and the city was broken. In the same year Brunswick definitely ranged itself on the side of the duke's enemies by joining the League of Schmalkald. The duke was further infuriated in 1540 by the closing of the monasteries of Saint Blasius and Saint Cyriacus, which had always stood in the closest relation to his house. As the result of daily rubs the unfriendliness between Henry and Brunswick developed into open war. Of course the emperor took the side of the Catholic leader and ordered the city council (February, 1540) to recognize the sovereignty and jurisdiction of the duke over all disputed monasteries, and to hold itself amenable to the ducal court.[66] It was at this time that Henry, at war also with Goslar, was charged with carrying out the ban against that city. From this time the struggles of Henry with his chief city became part of his war with the League of Schmalkald and of the larger Reformation history. Economic causes entered largely, and there were many such complaints on the part of the burghers as that Henry's men made the roads unsafe for merchants on their way to the Leipzig Fair. We have seen that the Diet of Regensburg failed to settle Henry's difficulties with the Schmalkald League or with Goslar. The case was the same with Brunswick and the duke continued to molest travelers on the commercial routes and to take their goods and claim tribute. When in May, 1541, Henry demanded from the city council the tax to be used against the Turks, the city fathers as a sign of their independence sent their share to the treasury of the circle in Hanover.[67] In September, 1545, Henry ordered the gild masters, the members of the council and the leaders of the common people to abandon the league and return to Catholicism.[68] Receiving no answer, the duke tried to

[65] Hassebrauk, *op. cit.*, 14 ff.

[66] *Ibid.*, 18, 35.

[67] *Ibid.*, 37.

[68] The demand is printed by von Strombeck in *Neues Vaterland. Archiv. des Königreichs Hannover*, 1829, 3.

burn the city and by getting control of the highways closed all access to the town. On October 8, 1545, the council, the masters of gilds, and the whole city of Brunswick signed a letter which they addressed to "Highborn Prince, Ungracious Lord." The quarrel hurt the investors in Henry's mines who lived in Brunswick, for while it lasted he marketed his surplus metal and wool in Leipzig where he kept an agent for that purpose. In exchange, the needs of his chancery and court of Wolfenbüttel were satisfied by goods bought at the Leipzig Fair rather than in Brunswick.[69]

After Henry's release from captivity in 1547, the council of Brunswick begged for "negotiations and a treaty," and were even willing to pay taxes to their lord. But when it came to obeying the Interim, which Henry in his efforts to restore Catholicism wished observed, the burghers refused even to post the duke's orders.[70] Philip of Hesse's early taunt at Henry's powerlessness was still true. A Hessian chronicle relates that one day the two lords were together at Wolfenbüttel when seeing the towers of of Brunswick in the distance, Henry asked, "Have you a city equal to mine?" "Yes," answered landgrave, "it is a splendid, great city, but what good is it to you? You dare not command any one living in it even to pick up a stalk of straw. They do exactly as they please."[71] Henry could always strike Brunswick through her commerce, and in his rage at the refusal of the council to obey the Interim, he closed the great highway to Leipzig, forcing traffic to use the byways leading through Wolfenbüttel and thus to pay custom duties. This hurt Brunswick trade so much that Lübeck (the Hanse had so far kept out of the struggle), tried to interfere, as did Philip of Grubenhagen on behalf of his subjects. In revenge the men of Brunswick fell on the monastery of Riddagshausen which belonged to the duke, destroyed all they could lay hands on, "and took also all the lead with which the beautiful great church was covered." In 1550 Henry besieged the city for eight weeks, burning grain and windmills and cutting off the river Oker so that the people suffered from lack of water within the city.

After the peace with Goslar (June 1552), and the battle of Sievershausen (1553), Henry was free to devote all his strength

[69] *Alterthümer Braunschweig*, 97.
[70] Hassebrauk, *op. cit.*, 48.
[71] Printed in Heinemann, *op. cit.*, II, 378.

to the settlement of the Brunswick problem. In September he began a siege of the city, intending to conquer in real earnest.[72] It is impossible to say how far the duke's vengeance might have gone had not the emperor and the cities of Nuremberg, Einbeck, Hildesheim and Göttingen interposed and demanded peace. The Great Treaty which for long years remained the basis of the relations between the city and its lords was signed October 20, 1553.[73] By this the city promised to recognize the duke and his heirs as overlords and to respect the *jus patronatus*; the duke might tax the city, but the burghers must again be recognized in his *Landtag*. On one of the sorest points, that of the mortgaged lands, Henry was victorious. The city was free to choose its own religion, while the duke decided for the surrounding rural districts. The terms of this treaty seemed on the whole to strengthen the duke's position though he lost on the religious count. In token of good will, the city fathers presented the young ducal heir, Julius, with a mount and an elaborate saddle. At this peace celebration Henry said: "Now, dear citizens, all is forgotten and forgiven from the bottom of my heart. I will always be and remain your gracious lord." After the peace was made Henry's finances revived and he wanted to buy back the land he had mortgaged to the city. As had been the case with Goslar years before, the council objected, and the quarrels in the imperial court over this question lasted until Henry's death. Though there was no lack of difficulties throughout Henry's life, conditions between him and the city were much happier after 1553. The fact that emperor after emperor during the century confirmed the old privileges of the city of Brunswick and even added to them shows, if not active unpleasantness between the dukes and city council, at least a tendency on the part of the latter to fortify themselves against their ruler by an appeal to a higher authority.[74] The condolences offered by the city council to Julius on the death of the old duke seem more than empty words and show a real appreciation of the fact that Henry had aided the prosperity of his greatest city.

[72] Heinemann, *op. cit.*, II, 388.

[73] For text, see Rehtmeier, *op. cit.*, 924.

[74] *Urkundenbuch der Stadt Braunschweig*, 374, 377, 379, 507, 511, 514, etc., etc.

As has been seen, religion was for the fighting Duke Henry, involved as he was in the tangled intrigues of his time and country, a matter not of piety but of politics. Defection from Rome meant for him the loss of the emperor's support and consequently of a part at least of his own power as prince. His advice to Charles at the Diet of Augsburg to concede the Protestant demands shows a lack of true religious feeling, rather than a real spirit of toleration. Köll says: "If the emperor at Worms had declared for Luther no prince would have expelled the papists more promptly than Henry."[75] His friendship with the Protestant Philip of Hesse shows that politics were more important than religion to the duke of Brunswick. Policy also directed his tolerant attitude toward the Lutheran mining communities of the Upper Harz. On his return from captivity, the duke held at Easter, 1548, an assembly in Wolfenbüttel, at which he instructed all his subjects to accept the Interim and ordered all evangelical preachers to leave his land. Though this edict was not thoroughly enforced it shows Henry's attitude. In 1553 he was compelled to allow the city of Brunswick uninterrupted observance of the Lutheran faith.[76] With age Henry apparently developed an element of personal religion. He had studied the Bible carefully while in prison and during his later years showed a more lenient attitude toward those who did not agree with him. He hoped that a church council would settle all these difficulties and was none too friendly to the religious peace of Augsburg. However, in 1568, in a statement made to the princes and nobles of the lower Saxon circle, he admitted the truth of the Augsburg confession.[77] It was probably in reference to this that his son Julius, a Protestant, in the introduction to his church ordinance, said that his father died a professor of the evangelical teaching.[78] Moreover it is certain that towards the end of his life Henry permitted Lutheran hymns to be sung in the court chapel and allowed communion in both kinds to be celebrated throughout his duchy.[79]

[75] Köll, *op. cit.*, 16, 17.

[76] *Braunschweig Hofgerichtsordnung.*

[77] Rehtmeier, *op. cit.*, 948.

[78] "In der wahrhaftigen und seligmachenden Erkenntniss, seines lieben Sohns Jesu Christi." The ordinance is published in the *Chur-Braunschweig-Lüneburgische Landes Ordnungen*, etc.

[79] Koldewey, *Heinz von Wolfenbüttel*, 68.

Under the Duchess Elisabeth, we have seen that the iron mines in Grund enjoyed such prosperity that "they were the subject of consideration with the common man and with high potentates." It was perhaps the knowledge of her success which led Henry's intimate friend, Duke George of Saxony, to advise reviving the ancient silver mines of the Upper Harz: "Cost what it may, there is sure to be a handsome surplus . . . the old miners would not have been there for nothing."[80] The duke took the advice of his friend. In 1524 on Henry's request Count Stephen von Schlick sent from the famous Bohemian mining district of St. Joachimsthal in the Erzgebirge Wolf Sturtz, an expert miner, to examine into the question of reopening the Harz silver mines.[81] The report was satisfactory and in the Upper Harz in 1526 they began to keep a record of the grants of mines to investors.

Henry's first mining ordinance issued about two years after the death of his grandmother Elisabeth was printed in 1524, at Erfurt, for the mines "bey Gittel im Grunde gelegen."[82] This was evidently a formal statement by the owner of the property. It included regulations already issued in writing, as well as new laws. During the long period of inactivity in these Upper Harz mines the local customs had probably been forgotten. Henry, who had no experience in mining, was not likely to take his laws from the neighboring Rammelsberg mine which was conducted at this time by a company of the citizens of Goslar. So it was natural that the duke should seek his model in the famous Saxon code issued by his friend Duke George in 1509 for his prosperous mine at St. Annaberg. The bulk of the regulations (articles I to CIII) are identical in both codes. The few published by Wagner and Günther are those in which some necessary changes from the model were made. To understand the situation one must consult the Saxon regulations.[83] Here it is a question not of a group of customs which had developed in the Harz, but of a ready-made code, transplanted fullgrown to this, as to most other mining localities in north Germany. This code of 1524 is undoubtedly the body of laws which Hake says was

[80] Hake, *Bergchronik*, 36, 23.
[81] Malortie, *Beiträge zur Geschichte Braunschweig und Lüneburg*, IV, 152.
[82] Wagner, *Corpus Juris*, 1041; H. Z., 1906, 290.
[83] Published by Ermisch in *Das Sächsische Bergrecht des Mittelalters*.

mentioned in the records of the mine of 1526. Writing during the reign of Duke Julius he was unable to find this code or to learn anything of its contents.[84]

Copies of this Saxon code, the first body of mine regulations to be issued in print, were rare within ten years of its publication, and the manuscript has been lost.[85] These rules are, of course, based on custom and are in the main like the ordinances of 1499 and 1503 issued for the same mine. The roots of these earlier codes for St. Annaberg are to be found in the Freiberg mining laws of the thirteenth century. This Saxon Code was copied in the regulations issued in 1548 for Joachimsthal in Bohemia, and one or the other served as a model throughout the mining districts of north Germany. Thus the Annaberg Code of 1509 was "the mother of almost all the mining codes issued in north and central Germany," during the sixteenth century.[86] Its introduction into the Harz towns, therefore, becomes a perfectly natural process, especially in view of the friendship between Henry of Brunswick and Duke George of Saxony who issued the code of 1509.

After the preamble, which states as the excuse for the printing of the document the desire that "ignorance might be no excuse for transgressing the law," the list of officials and their duties were established. The highest official was the superintendent (*Berghauptmann*) who represented the ruler and property owner. This was an office of high dignity. In the Harz in 1550 it was held by a nobleman, Hans von Wiedersdorf, who had been the duke's chamberlain.[87] The duke's superintendent in 1589, Georg Engelhard von Lohneisen, must have been a man of great wealth, for at Remlingen he built a country seat "in the Italian manner, with a flat roof." He was also a lover of good art and at this place had set up a printing press, where "different books with wonderfully good letters were printed."[88] The other officials under the authority of the superintendent were the

[84] Hake, *Bergchronik*, 37, 13.

[85] Ermisch, *op. cit.*, CLX, 163.

[86] Quoted, by Ermisch, *op. cit.*, CLXIV; Schmoller, *op. cit.*, 980.

[87] Hake, *Bergchronik*, 57, 2.

[88] Zeiller, *op. cit.*, 175. Lohneisen or Löhneyss was one of the early Cameralists, and had served in electoral Saxony before coming to Brunswick-Wolfenbüttel. Upon the cameralists see A. W. Small, *The Cameralists*, Chicago 1909; Th. F. Von der Goltz, *Geschichte der deutschen Landwirtschaft*, Berlin 1903, I, 290–389, and literature there cited.

master of the mine (*Bergmeister*), a board of eight (*Geschworne*) who were trained miners, two tithe collectors (*Zehntner*), two inspectors of the smelting-houses (*Hüttenreiter*), a cashier (*Austheiler*), a share clerk (*Gegenschreiber*), and a mining clerk (*Bergschreiber*).[89] These officials represented the ruler's interests and were chosen by him. Those subordinate to the superintendent might not leave the mine without his permission. The local ruler owned all mines and his regalian rights were recognized by the payment to him of a tenth of the output. The money necessary for developing the mines was raised by capitalists who for some reason had been attracted to the investment. They were usually wealthy burghers but frequently came from the noble class. These associates or shareholders (*Gewerken*),[90] in their turn employed their own officials who were, however, responsible to those of the lord; such were the foreman (*Schichtmeister*) and manager (*Steiger*) who employed miners to do the actual physical work. All of these officials, employés of the lord or of the capitalists, received wages. Any profits which remained after the lord had received his tenth and all expenses were paid, accrued to the shareholders in proportion to their investment. As a rule each silver mine was divided into 128 or 130 shares, the following division being typical; 124 were subscribed for; of the remaining six, four belonged to the owner of the mine, one to the church, and one to the mine city.[91] As a rule there were as many shareholders as shares in a silver mine. This made it easier to get capital and to make the temporary advance (*Zubusse*) for running expenses which, even in the most prosperous periods of the best mines amounted to three times the profit earned by such investment.[92]

The duties of the superintendent were to keep the peace, and to see that all enjoyed justice and observed the code. The Saxon ordinance forbade the superintendent's being a shareholder in the

[89] These terms are those used in the Hoover translation of *De Re Metallica*, 77, n., 1.

[90] Eisenhart in *De Regali Metallifodinarium Jure*, 7, defines Gewerken as "a certain number who form a society or company to operate a mine at their own expense."

[91] Each mine in the Harz was divided into 128 or 130 shares. In Joachimsthal there were 128. Schmoller, *op. cit.*, 985; Hake, *Bergchronik*, 128, 20; Günther, *Der Harz*, 201.

[92] Schmoller, *op. cit.*, 986. Careful regulations for the collection and repayment of this sum are made in the Saxon Code (Art. 55–63).

mine. This was altered by Henry in his code for the Upper Harz by the addition of the phrase "except with our permission." This disability also applied to the master of the mine.

The chief duty of the master of the mine was to grant the different areas which were to be worked. He assigned new claims or old passages which for some reason had been abandoned. Once a week he, with the board of eight, the bookkeeper and the superintendent if possible, met to make a record of these leases. The master had to see that justice was done, and any dispute concerning the holdings was verified from his records. All sorts of disputes over mining affairs came first to the master. If, however, he failed to satisfy the contending parties the affair was brought before the judge and council of the city of St. Annaberg who decided according to the mine law. Any miner killing a man, except in self defense, was banished forever from the mine and city. It was the business of the master of the mine and the board of eight to see that no unnecessary building was done, and for that reason, no galleries might be undertaken without their permission. The duke's officials, the superintendent and master were superior in station to the employés of the shareholders, the manager and inspectors, and were responsible for the trustworthiness of the latter. The manager might be discharged by the master without the permission of the shareholders, but the shareholders might not discharge their own officials without the knowledge of the superintendent and master. Every quarter the master with the superintendent inspected the manager's accounts for the purpose of protecting the investors. No contracts could be made without the master's consent. The board of eight were responsible to the master. Their duty was to inspect each mine every thirteen days to see how it was being worked and to enforce the code. What they could not remedy it was their duty to report to the master and superintendent.

The bookkeeper had to keep a record of all leases with the name of the shareholders to whom they were made. In another book kept by the same official appeared a statement of all taxes, a record of permission to delay new work (*Fristung*) and accounts. He also kept a record of all money invested by the shareholders for carrying on the operations of the mine (*Zubusse*). All these books were to be accessible only to the master and bookkeeper. Schmoller considers that the Saxon regulations in no small measure owed

their spread to this system of written records.[93] The man who contracted to undertake the operation of the mine was obliged to give it over to his associates on the day that it was granted him or on the following day. With the knowledge of the superintendent and master and with the consent of the majority of the shareholders, the contractor had to put the mine in charge of a manager and overseer and give the master the necessary money for beginning the work. Neither of these employés of the investors might enjoy any profit from the contracts nor might they be related to the investors.

No manager might have charge of more than six mines. It was his duty to care for all supplies provided by the company such as tallow, iron, rope, buckets, wood, boards and nails and to see that the laborers had what they needed. He gave iron and tallow by weight to the overseer who in his turn gave them to the miners. These supplies might not be loaned from one mine (*Zeche*) to another without the master's permission. On pay day the manager paid with good coin the overseer as well as the miners and received the small weekly tax. One of his chief duties was to keep an account of all the money paid out and the value of the supplies dispensed. This report was submitted to the superintendent and master. The manager was paid by the company.[94] The overseers, one for each mine, were subordinate to the manager whom they assisted in carrying out his duties. The overseer was directly over the miners and his chief responsibility was to see that they did their work properly and observed their shifts. He might not live more than three miles from the mine.[95]

In close connection with the mine were the smelting-houses where except in unusual cases, local ore was refined. All of the good ore was carried to them in covered buckets and no one connected with the mine was allowed to carry on any trade in this raw product. The superintendent and master had to see that in each smeltery was found a bookkeeper (*Hüttenschreiber*) capable of making a true record of all transactions. It was his duty to see that the smelters, who might not be shareholders in the business, were well trained; to be present at the end of every shift; to

[93] Schmoller, *op. cit.*, 989.

[94] Schmoller, *op. cit.*, 995.

[95] Henry's code for Gittelde (Art. 80) says that the overseer must live at or near the mine. Wagner, *op. cit.*, 1042.

be responsible for the quality of work done and to be present when the ore was being smelted. He had to test and weigh the resulting metal and to report its amount to the collector of the tithes. This collector was responsible for seeing that the lord received his tenth. Inspectors of the furnaces had to visit each plant every day to see that the regulations were observed and that the work was well done, and two assayers who were under the direction of the superintendent and master were responsible for the quality of the metal.

Further, the code established three daily shifts of eight hours each, and uniformity of wages in the different mines; made regulations for compelling honesty on the part of the laborers; arranged for the upkeep of passages and galleries; planned for the selling of shares, and finally, stated that the master was to pass on any cases not specifically provided for. Then followed a list of the oaths which each official swore to his sovereign.

This, then was the code issued by Henry for Gittelde in 1524. He added articles which established the wages paid to ordinary miners and made certain other provisions. If any laborer was hurt in the course of his work in a paying mine, he should receive wages during eight weeks of sickness, and have his doctor's bills paid. But if the accident happened in a new digging which was being worked by subsidy, he should be provided for during only four weeks of illness. Any contingency not provided for in the code was to be settled according to custom.[96]

In the same year in which he issued the first body of mining laws for the Upper Harz, Henry gave these mining cities a special set of privileges (*Bergfreiheit*), a charter to attract capital. A seventeenth century definition says that this "freedom extends partly to the persons and goods of those working in the mines, and partly to the mountains and districts where the diggings are located."[97] The inducement was effective, for among the investors were several members of the nobility as well as rich merchants of Brunswick, Magdeburg, Bremen, Hamburg, Lübeck and Verden. That is, these mines were operated by mining companies whose members thought this a good investment for capital, but under rules laid down by the prince.[98] Hake, though he does not men-

[96] Wagner, *op. cit.*, 1042.
[97] Eisenhart, *op. cit.*, 8.
[98] Günther, *Der Harz*, 201.

tion this charter, says that so many non-resident shareholders began to carry on work in the district that new diggings had to be opened in 1526.[99] In the preamble Henry joined with his own name that of his brother William who at the time was carefully secured in prison.[100] The charter provided for "free roads and paths" to and from the mines, and for the free use of water for the smelting-houses, "according to the ancient custom of mines." To attract strangers, the duke allowed miners with their goods to enter and leave his territory at will. Perhaps the most striking features of these privileges are those which provided daily bread for this non-agricultural class. A "free and open" market was to be held every Saturday and no tax was to be paid by those who had for sale bread, wine, beer, meat, cheese, butter, eggs, salt, cloth and other articles needed by the miners. The miners themselves were allowed to bake, brew, slaughter and to sell wine and beer. Settlers might carry on business free of taxes. Miners were exempt from all tolls, taxes, imposts and excises "except what our need and the land demands, and they do from their good will." The miners might have free from all tribute the wood they needed for use in the mines, smelting-houses and dwellings. For three years the miners were excused from paying the lord his tenth of the ore and for the same period the shareholders were free to dispose as they pleased of all their silver, copper and lead. After this period, the tenth must be paid and all of the metal delivered into the treasury of Henry who bought and paid for it according to the custom of St. Annaberg and St. Joachimsthal. In other words, after these new workers were fairly established, the lord claimed the right of preëmption. Such a group of articles made of these capitalists and skilled workmen a privileged class, especially during their first three years in the Harz. These economic exemptions may be strikingly contrasted with the conditions which in the year following led to the Peasants' Revolt.[101]

[99] Hake, *Bergchronik*, 37.

[100] This charter is printed by Günther, from a transcript in the Achenbach library in Klausthal. H. Z. 1906, 292.

[101] The revival of the mining industry in the Harz in the 16th century was general. For an account of the mining activities of other princes in the Harz see *Die älteste Geschichte der Bergstadt S. Andreasberg*, etc., by Günther H. Z., 1909, 191. In 1521 the counts of Honstein issued a charter of privileges to attract miners to their lands. This was modelled on the charter of Anna-

The duke, as owner of these mines, intended also to build the galleries which should drain them thus performing substantial services in return for his tenth and the right of preëmption.[102]

For some reason unknown to Hake, there was a slump in the prosperity of the mines in 1527. Those in Grund were idle and the claims which had been established throughout the Harz were given up.[103] The pious chronicler observes that "what mounts quickly soon falls down." More sensibly he adds that the prosperity of the Rammelsberg, where one of the new mines was leased to no less a person than Princess Catherine, duchess of Saxony, may have lured workers away. In 1528 prosperity returned once more and much capital was invested in the Harz by burghers of the city of Brunswick. In Grund the Magdeburg galleries (*Stollen*) were made in order to drain the mine.[104] Probably these were built by skilled workmen from Magdeburg, for in 1532 Hake says that capitalists from that city began again to invest in mines. By 1529 Wildemann had attracted so many settlers that, at the request of Wolff Seitels, probably an official, the reports and accounts of the output of the local mine were transferred thither. These had previously been made in Grund, three miles away "because no one lived in Wildemann."

In 1532, Duke Henry, on the request of some of the investors issued another set of privileges, which seem to have been the first of which Hake had any cognizance.[105] Again the duke's name was linked with that of his still imprisoned brother William in the benefits which he offered to Grund. These were also extended to Zellerfeld which he controlled with his cousin Philip of Grubenhagen. In the main these privileges were like those of 1524. Safe conduct was assured to all who emigrated to this district. Miners might trade freely and as freely leave on condition that the debts contracted in the mine cities were properly and decently paid. Both Grund and Zellerfeld were allowed the free weekly

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berg in the Erzgebirge and was the first one given in the Upper Harz. This charter of 1521 is published by Calvör, *Historische Nachricht*, 215. The Grubenhagen mines are discussed by Calvör, 143 ff.

[102] Günther, *Der Harz*, 201.

[103] Hake, *Bergchronik*, 37, 22.

[104] *Ibid.*, 38, 3.

[105] *Ibid.*, 38, 39; Günther, H.Z., 1906, 294; These privileges are also published by Calvör, *Historische Nachricht*, 217.

market with all the privileges of 1524. After granting both miners and shareholders three years' freedom from taxation the duke went on to fix the price to be paid from his treasury for the metal sold to him, "as is the custom of mine law and usage in other principalities and countries." No mention was made of the free sale of metals for three years, previously allowed to shareholders.

So successful were the inducements of 1532 that the next year the chronicler announces so many foreign shareholders that seventeen new mines were opened.[106] It is quite probable that these seventeen included only those on the Iberge. Hake wonders over and laments the fact that though these mines produced silver the fact is not mentioned in the records (*Recessbuch*) until 1538. He deems the matter so "chronicle worthy" that he thinks there must have been another journal begun in the time of Elisabeth which was lost during the years when Henry's enemies overran the land, and the duke himself was in captivity. In 1534 the investors were encouraged by the fact that the bishop of Cologne leased a district next to Wildemann and there began operations. In the next year the first machine for pumping out water was introduced into the Wildemann mine.

Henry was determined that his mines should succeed. The output of the iron mines established by Elisabeth in Grund had fallen off, after long "giving many people daily bread, and for a while growing better." It was to remedy this condition, that the duke in 1535 issued a code of laws for the iron mines of Grund.[107] According to old custom workmen, owners of the furnaces, and steelsmiths were to choose an overseer, who should have two assistants. He was to regulate affairs according to these articles and to give permission for new undertakings. Three times a week he had to measure the ore which might then be sold at an established price to the owners of the smelting-houses or to the steelsmiths. He also had to inspect each pit (*Grube*) every week. Any part of the mine which lay idle for thirteen days was considered free and might be leased to anyone who desired it. In unusual cases the overseer might prolong this period. The new code also fixed the amount of wages paid to laborers in the mines and to those who worked in

[106] Hake, *Bergchronik*, 41, 26.

[107] Printed from a transcript in the archives at Wolfenbüttel, H. Z., 1906, 48.

the smelteries and for the steelsmiths. The lord, as usual, claimed one tenth of the output, and the right of preëmption. These regulations seem to aim not so much to lighten the labors of the workmen as to insure justice from employers; on the whole they favor the employed class. Great care was taken to keep up the standard of the output. Anxious as the lord was concerning the prosperity of the mines, he had no notion of attracting labor and capital by giving up any of his prerogatives or by reducing his share of gain, for undoubtedly the chief part of Henry's revenue was drawn from mines. Though this code is comparatively short and simple, it is easy to trace in it the influence of the Saxon Code of 1509.

Henry's later codes were issued in 1550 and 1555. That of January 1, 1550, applied to the mines in Grund, Wildemann, Zellerfeld, Lautenthal and other silver, lead and copper mines connected with them, and was printed in Wolfenbüttel in 1552.[108] The officials of the mine had in practice found it necessary to revise the Saxon ordinance to suit local conditions, and in so doing had drifted too far from the original requirements.[109] The wording of the preamble indicates that slight improvements rather than radical changes from old customs were made in the code of 1550.[110] As usual, the prince reserved the right to change the law as he saw fit and threatened with dire punishment any who failed to observe its regulations. Wagner does not print the bulk of this code which is to be found only in obscure publications of the seventeenth century, but says that it is like that for Brunswick, issued September 18, 1593 by Dukes Wolfgang and Philip of the Grubenhagen line.[111] The latter became the best known of any of the Harz laws and this fact probably explains its omission by Wagner. Now, if an ordinance of 1550 is like one of 1593, it is obvious that the earlier one served as model. The preamble and the articles printed by Wagner indicate an intimate relationship between the code of 1550 and that already in use in the Upper Harz which was the Saxon Code of 1509. Moreover we have the

[108] Wagner, *op. cit.*, 1055. The mining industry was revived later in Lautenthal than in the other Upper Harz towns. The fragmentary records suggest that the mines of this village were worked only intermittently.

[109] Hake, *Bergchronik*, 57, 26.

[110] Wagner, *op. cit.*, 1055.

[111] *Ibid.*, XXXIII.

judgment of Ermisch and Schmoller, that this served as a model in north Germany throughout the sixteenth century.[112] We may then assume that the code of 1550 consisted of the old rules with slight variations.

On April 2, 1554 Ernest, duke of Brunswick and Lüneburg, of the Grubenhagen line, issued an ordinance for the mines of Zellerfeld, Borgstalle and Clausthal. Again, Wagner says that this is like the Brunswick code of 1593, except in the few articles where it follows Henry's ordinance of 1550.[113]

On March 21, 1555 Henry the Younger of Brunswick and Lüneburg issued the last mine ordinance known to Wagner.[114] It was for the mines of the Rammelsberg, Hirschberg, Grund, Wildemann, Zellerfeld and Lautenthal and was based on the laws established October 3, 1554 for electoral Saxony which are printed only in rare books of the sixteenth and seventeenth centuries.[115] Here the duke was still advertising his mines in the hope of attracting more labor and capital. One of his objects in printing the laws was that everyone might know "how all affairs are conducted in our mines," and that "each miner and shareholder, native or foreign, might know how to judge." Unfortuately the fragment printed by Wagner is too slight to give a real idea of what the regulations were, but again we assume, that the later Saxon code followed that of 1509, whose antecedents go back into the thirteenth century.

By 1534 Wildemann had grown large enough to need its own judge though it was still dependent on Grund for its pastor.[116]

[112] Ermisch, *op. cit.*, CLXIV; Schmoller, *op. cit.*, 965. Eisenhart, *op. cit.*, occasionally quotes the *Ordinat, Metallica Sereniss, Ducis Brunsvicensis.* As he wrote in 1681 he was presumably using the code of 1593. In several cases these quotations are identical with provisions of the Saxon code of 1509.

[113] Wagner, *op. cit.*, 1061. Comparatively little is known of the Grubenhagen mines during the 16th century. Calvör, *Historische Nachricht*, 144. On page 219, Calvör publishes a set of privileges issued by Ernest of Grubenhagen in 1554. These are modelled on the privileges of 1553 issued by Henry of Brunswick. In 1596 the Grubenhagen lands and mines came into the possession of the Wolfenbüttel line. See also H. Z., 1884, 17.

[114] Wagner, *op. cit.*, 1065.

[115] Naturally Henry found the Saxon laws issued by the duke more suitable for use in his mines than the native law of the Rammelsberg which had developed under the ownership of free burghers. See Neuburg, *op. cit.*, 323.

[116] Hake, *Bergchronik*, 42, 14.

Its mines must have been very promising, since in the next year Duke Henry enlarged the area which was being worked. In the same year the first machine for ridding the mine of water was installed.[117] This was finished in 1536, and the duke happening to be at the neighboring castle of Stauffenburg sent a message to the mine, saying that he wished to be present when the wheel was first started. The next day he came over, and viewed the operation. In an hour the water was lowered three-quarters of a fathom.[118] The duke's pleasure was short-lived, for after twenty four hours the machine could not be made to operate. A second experiment proved successful. It seems probable that this was in an old mine, long unused, for in this connection Hake says that the early miners had dug only eleven fathoms.[119] At this time the duke put the first superintendent over the mines. The next day of accounting showed that some silver had been found in the Wildemann and other places, and the entry of 1537 says that "the mine improved from quarter to quarter, and new passages were established."

It will be remembered that the same pastor served both Wildemann and Grund. At Wildemann in fine weather he preached from a window of the village inn to the people assembled in the market place; when it stormed the people came into the common room of the hostelry. This did not prove satisfactory because the youths gathered behind the tall tiled stove were frivolous and even drank brandy during the sermon. Afterwards the men remained to drink and gamble. To prevent this, in 1542 a church

[117] Wasserkunst, Heintzenkunst. The machines used in the 16th century for raising ore and water from mines are described and illustrated in book VI of Agricola's *De Re Metallica* edited by Hoover. The same machine was sometimes used to lift both ore and water. The simplest form was that in which buckets were raised by means of a windlass, turned by men. There seem to have been two chief types of machines used for raising water only. One consisted of an endless chain from which buckets were suspended, connected with a wheel which was turned by water or man power; the other was some form of suction-pump often operated by a water-wheel. At Wildemann the wheel was turned by water. Hake, *Bergchronik*, 42, 27 ff. This problem of removing superfluous water from mines was successfully solved only with the invention of the steam engine in the 18th century. Hoover's *Agricola*, 149, note 1. See also Calvör, *Maschinenwesens*, 35.

[118] A fathom(lachter) is 67.5 inches.

[119] The early miners (*Alte Mann*) were those who worked here before the Black Death and were the first to mine in the Upper Harz. See H. Z., 1906, 13.

edifice was built. It was consecrated in the next year but the same pastor continued to minister to both Wildemann and Zellerfeld until 1548.[120] When the towns had grown so large that one pastor could not serve both, the people of Wildemann humbly begged the duke for an evangelical preacher.[121] In reply they received the blunt but welcome response that they might have whom they pleased. In 1545 Wildemann chose its first judge.

Zellerfeld was the oldest of the reopened mining districts.[122] It was not one of the extremely old mines, for with Wildemann it is first mentioned in the division of 1495, which gave the common ownership of the mines to Duke Henry the Elder and Erich.[123] Zellerfeld grew like the proverbial mining town. In 1538 the judge, who since 1535 had been a necessary official, began the first book of city records and the first church was built on the foundations of the old monastery of Celle.[124] The next year water was piped to the market place "as it still goes," and through the neighboring streets. It was almost ten years later that Hake reported that water was piped to the brewery and bath-houses in Wildemann. In 1540 extensive building operations were undertaken by the shareholders at Zellerfeld. They and the prince completed twenty one mines which produced some silver though the records do not mention that metal for ten years.[125] No new concessions were granted, and the reason is to be found in general conditions. In 1542 the Schmalkald League declared war on Henry and "those here in the mine cities sat in twofold danger and fear" of an attack by the league, and "on account of our neighbors, those of Goslar" who regarded the new mines as future rivals.[126] Goslar had adopted Luther's religion in 1528, and even earlier the Peasants' Revolt had made itself felt in the Harz. This brought the miners as well as other classes face to face with the religious problem, but

[120] Hake, *Bergchronik*, 50, 6 ff. Johann Gnapheus served Zellerfeld as pastor from 1543 until 1575. He received one gulden weekly for rent and pasturage for three cows. Koldewey, Z. N. S., 1868, 282.

[121] Hake, *Bergchronik*, 56, 25.

[122] Günther, *Der Harz*, 71.

[123] Wagner, *op. cit.*, XXIX.

[124] Hake, *Bergchronik*, 44, 28.

[125] *Ibid.*, 46, 22

[126] *Ibid.*, 48, 6.

matters did not reach a crisis before 1541. Zellerfeld had chosen a Protestant pastor in 1539.[127] This must have been allowed by the prince, even though we may question the account of his "Christ-like mildness" given by Hake who was himself a Protestant. The chronicler through genuine belief or through policy lays the dismissal of this pastor at the door of Henry's confessor Bernhardino. The duke had offered himself to pay a Catholic priest to care for the spiritual affairs of the mining towns when a petition from the distressed miners showed the ruler that he had roused lively opposition, and he deemed it the part of discretion to retreat. Instead of forcing the matter he told them as he later told their neighbors at Wildemann, (1541) that if "one Lutheran preacher weren't enough they might have two." At this time difficulties were closing in on Henry and it is probable that he would have made much greater concessions to preserve his valuable income from the mines. He had troubles enough without creating a new class of enemies. On his return from captivity in 1547 the religious observances of the mine cities remained undisturbed. They continued to choose their own officials as they had done when the league held authority over them. They used the forms of the church of Brunswick "though some were against it and annoyed thereat."[128] In 1545 Zellerfeld had been prosperous enough to employ an organist and two years later the citizens purchased a private house to be used as a town hall. Zellerfeld shortly became the most important as well as the largest of Henry's Harz mining towns.[129]

Passing mention has been made of the fact that in 1542 the League of Schmalkald declared war on Henry; he being unprepared to meet so large a force, fled from his dominion and took refuge with his Catholic allies the dukes of Bavaria. In this year while the Protestant army was in Gandersheim representatives of the mines were ordered to that city to swear allegiance to the Protestant leaders.[130] There they reported their danger of attack from Goslar and told how for three weeks they had been forced to

[127] Koldewey, *Die Reformation des Herzogthums Braunschweig-Wolfenbüttel*, 255; Hake, *Bergchronik*, 46 ff.

[128] *Ibid.*, 55, 14.

[129] Günther, *Der Harz*, 72.

[130] Hake, *Bergchronik*, 48, 23; Günther, H.Z., 1906, 39.

keep their cattle in deep, remote woods for safety. Instead of troops, the league gave the miners the coat of arms of Hesse and of electoral Saxony which Goslar, also a member of the league was bound to respect. In this very year, however, the forces of Goslar, 300 strong, fell on Zellerfeld, destroyed walls, doors and windows and left only three tile-stoves standing in the town. The intruders insulted the wives and children of the miners and carried off sixteen prisoners. The method of governing the absent duke's territories presented a problem demanding solution. After many suggestions had been considered it was decided to maintain an administrative commission, which should reside at Wolfenbüttel.[131] So the "council of Saxony and Hesse ruled the mines as though they belonged to them and made many changes in their regulations" putting in their own officials.[132] These years of Henry's absence were a time of prosperity for much silver was found in Wildemann and Grund. No records were kept and Hake, writing in the next generation says: "This has all come down as tradition." During his absence Henry wrote to the tithe collector at Zellerfeld, telling him to carry on the mines as well as possible and to have good wine on hand for, "we intend soon to come back for a report, and will bring some Spanish, Italian and other good German miners to see what the new lords have accomplished and built."[133] In 1543 at Grund the output of silver increased until it was so much more prosperous than Wildemann and Zellerfeld that without help it maintained its contribution to the fund for sick miners.[134] The other towns continued to hold their fund in common.

[131] Koldewey, *Heinz von Wolfenbüttel*, 55.

[132] Hake, *Bergchronik*, 49, 22.

[133] Quoted by Heinemann, *op. cit.*, II, 394.

[134] Hake, *Bergchronik*, 50, 41 ff. In Grund, where the first silver was recorded in 1539, more of this metal was found in 1543 than in Wildemann or Zellerfeld. The records of 1549 show that new galleries were built in Grund during that year, but in the next registration of new mines which has been preserved, that of 1564, no new building is recorded in Grund. Calvör, *Hist. Nachricht*, 136, thinks that the silver mines at this place were deserted about the middle of the century. Hake, *Bergchronik*, 147, 18, speaks of the attempt made by Duke Julius to revive the silver industry here. How successful this attempt was is not known.

In October of 1545 at Calefeld Henry gave himself up and was made prisoner.[135] His feud with Goslar was not yet settled so that city which still controlled the Rammelsberg mine found it convenient to attack the prince through his mines of the Upper Harz. A company of two hundred men from Goslar plundered Wildemann and the surrounding country, carried off what was portable and took some prisoners. The men of Zellerfeld, expecting an attack, stood in military order fully armed in the streets of their own town, but the marauding company passed them by and returned directly to Goslar, scared by the report that Grund and Gittelde were coming to the rescue.

The people of the mine cities were much distressed at the changes in administration made by the governing council of the Schmalkald League.[136] Naturally the natives preferred the old men who knew their ways. Nevertheless, in successive years Hake records more and more new officials. In 1546 the master of the mine was from Schneeberg in Saxony, but in 1547 when Henry once more returned to his lands and restored order in the mines, he replaced the old officials. We may well believe that these miners honestly rejoiced at their lord's release, and that: "They thanked God and cherished a hope that now a proper rule would be established, and that each one would be protected from every danger and attack." The duke's renewed interest in the mines is illustrated by his undertakings in 1548. Galleries were necessary for some of the old mines, yet large capital was required for such construction. The duke therefore, took charge of the excavation, began the Frankenscherner galleries and in fourteen years extended them 1300 fathoms. He spared no expense and the work cost him several thousand *Reichsthaler*. He reaped his reward, for when the new galleries came into use, "much silver was produced, and his Grace's outlay was richly returned and the shareholders got good profit and exchange."[137] Since in some parts of the mine it seemed undesirable to build additional galleries the miners solved their great problem of draining the mines by the installation of machines

[135] Brandenburg, *Der Gefangennahme Heinrich von Braunschweig*, 67 ff.

[136] Hake, *Bergchronik*, 54, 9, 23.

[137] *Ibid.*, 55, 28 ff. From 1548 until 1554 the profits from the mines of Wildemann and Zellerfeld more than equalled the expense of operation. Calvör, *Historische Nachricht*, 115.

consisting of suction pumps or buckets fastened on an endless chain. In 1554 a machine was set up at Wildemann and another at Grund. The work was not entirely successful and later had to be repaired. These machines were still in use when Hake wrote. But some of the deep old passages worked by the early miners were in such bad condition that there seemed danger that work in them might come to a standstill. Hearing that the manager, Peter Adener, was an intelligent miner, Henry summoned him to Gandersheim, and there the two took counsel together, as to how the duke's mines could best be made permanently prosperous. His Grace asked the miner's advice, and Peter replied with humility but as one convinced: "Your Princely Grace must consider galleries and have them built where they will be deepest, cost what it will." The suggestion met with Henry's favor and he asked for an estimate that he might at once give the order to begin work. Here we catch a glimpse of mining etiquette. Peter was an employé of the shareholders, one who had charge of actual work, and so was under the supervision of the duke's representatives. He told the duke that it would not be suitable for him to act "behind the back of and without the knowledge of the master of the mine for it would bring him into disgrace with the officials and with other honest mine people."[138] As a result of Adener's advice work was begun at once, but the orders were given through the usual channels. In 1555 the deepest gallery in the Himmlische Herr mine, with several others, was built at great expense. That the investment was profitable is attested by the returns to prince and shareholders shown by the books of the mine.

Probably the second group of mine privileges and codes issued by Henry belonged to this general policy of restoring order and rehabilitating the mines after he had won back his lands. His great victory over Albert of Brandenburg at Sievershausen was won in 1553. It was perhaps Henry's greatest triumph, though it cost the lives of his two oldest sons. In this year the duke issued a group of inducements to attract foreign labor and capital to the mines. Hake mentions in detail only the privileges of 1532 and of 1556. Besides that of 1524, Günther has discovered a charter issued in 1553 and one in 1554, but has published only

[138] Hake, *Bergchronik*, 60, 61.

the former.[139] The articles of 1553 were issued for Zellerfeld, Wildemann and Grund. The first of these towns had by this time grown considerably and each boasted its own judge and council. The privileges might be enjoyed by any person who would help develop the mines of the vicinity. Though the miners were not allowed to sell wood they were free, under the direction of the forester to use untaxed all they needed for building shafts, smelteries, mills and stamping works and to burn what they required, as charcoal in the mines or as fuel for their personal comfort. The care of the forests indicated by these terms shows a dawning sense of the danger of deforestation which was a vital problem to the next generation. As in the older concessions the output of the mines was freed from taxation for three years which time might be extended at the request of the shareholders. These privileges, much more considerable than those of the earlier part of Henry's reign, were due to the duke's need of money to pay for the disasterous and expensive wars which had made deep inroads on his treasury. Every effort was made to provide the miners with plentiful food at reasonable prices. They might build breweries and wine-rooms where wine and beer could be sold free of excise. All trades and business were untaxed. Goods were to be free of tolls and the profits from their sale might be taken out of Henry's territory as freely as the commodities had been brought in. Free markets were to be held in each of the three mine cities every Saturday. Such necessities of life as bread, butter, cheese, beef, pigs, calves, tallow and iron could be sold there free of taxes. In addition, a free yearly market was to be held at a specified time in each of the three cities. Any citizen of these towns who cultivated the land or made a garden was freed from feudal or court service. This attempt to make the mine cities economically self supporting is in strong contrast to agricultural conditions elsewhere. Miners were even permitted to kill game birds and to catch fish in certain districts, privileges usually belonging exclusively to the nobility. Those who had worked in the mines of Brunswick could not be brought to justice for failure to pay debts contracted outside of the duchy, and a man who had killed another in self-defense was promised protection. These thriving cities of

[139] H. Z., 1906, 297. Hake alludes to the privileges of 1554, 62, 3. They established the price of metals. Hake also gives many additional regulations governing the Harz mines. *Bergchronik*, 119 ff.

course needed courts for the administration of justice. Burgomaster, judges, and council, presumably chosen by the people had to be acceptable to the duke. The local authorities decided disputes arising over the inheritance of mills, baths, saw mills, and the meat and salt supply, while the duke had jurisdiction in criminal cases. In mining matters appeals for justice were made to the court of Joachimsthal, while cases pertaining to other matters were settled in the duke's court. These three favored cities were also exempt from all tribute, taxes, court or military service. Nevertheless, when the "common land" or the person of the lord was endangered the miners were expected to throw themselves into the breach. This followed the custom of Joachimsthal and other free mine cities. The duke's declaration containing these inducements was "issued that each might build, and remain profitably faithful" to the increasingly prosperous mining towns.

In the next year on June 11, 1554, Henry's cousin Ernst of Grubenhagen issued to supplement his mining laws a set of privileges for Clausthal, which were almost identical with those of Henry. Clausthal, too, was a new town, and because of the difficulty of launching the business the rulers gave their assistance, building a smelting and a stamping house at their own expense. The fees connected with the use of this property were according to the cstom of the mines, but no shareholder might have the smelting or stamping of the ore done outside of the duke's dominions. This provision was probably made because it would have been so easy to transport the ore to Zellerfeld, which lay about two miles away just over the border of Henry's dominions.[140]

In 1556, Henry issued for Zellerfeld, Wildemann and Grund, what seems to have been his last set of privileges.[141] This document signed by the duke's own hand is evidently a supplement to the mining laws of March 21, 1555, and there is no essential difference between it and the charter of 1553. One change may be noticed, that all ore mined was to be free, for a period of three years, not only from payment of the tenth as in 1553, but from the ninth as well. This one ninth was the share due the capitalist who had financed the building of the necessary galleries of the mine.[142] The ninth was taken after the lord had his tenth and

[140] Wagner, *op. cit.*, 1061; Günther, H.Z., 1906, 261, n. 1.
[141] *Ibid.*, 300; Hake, *Bergchronik* 65, 14.
[142] Günther, H. Z., 1906, 261.

consequently amounted to a second tenth. Again the price of metals was established. These privileges allowed an appeal in certain cases to Freiberg as well as to Saint Joachimsthal, but it seems improbable that judicial questions concerning the mines could in practice have been carried to another government for settlement. This may simply be another way of saying that Henry observed the usual standard of mine justice.

Henry was quite frank about his motive in thus constituting the miners a privileged class. These concessions were made at the request of the judge and council of the three towns concerned: "In necessary heed that honest people shall come, and continue to come and build with evident usefulness." These privileges were printed and sent to various cities whose merchants and capitalists it was hoped to attract as shareholders. They were also posted in all mines to attract laborers.[143]

Concerning the peaceful activities of the years following Henry's return to his lands (1547) Rehtmeier says: "So he renewed and built other houses for his officials, manors, dykes and sheepwalks in the land, but especially he carried on the mines energetically, and made special forest regulations for them. He had moreover an excellent police system in his dominion, and safe, good roads." Though some new galleries were built, and the work increased, these last years of the duke's life seem to have been comparatively uneventful in his mining towns.

Communications between the duke and his officials were, in the early part of his reign, verbal and carried on either at the mines or at court; after Henry's release written communications became customary. An interesting series of these letters and orders has been preserved.[144] One of 1556 contains the appointment of Asmus Helder as head of the mines at Lutter. He was to receive 200 thaler a year, court dress for four people, a summer as well as a winter outfit, and fodder for four horses. Because he must provide for his wife and her sister and their attendants, he

[143] Günther, H. Z., 265. Eisenhart, *op. cit.*, 96, writing in 1681 says that there were 128 shares in the mines at Zellerfeld and Wildemann. In dividing the profits 132 shares were counted two going to the church and two to the city council. This charter was reissued in 1636 by Duke August the Younger to Zellerfeld, Wildemann, Grund and Lautenthal. H.Z., 1883, 199.

[144] Malortie, *Beiträge zur Gesch. des Braunschweig-Lüneburg. Hauses und Hofes*, IV, 136, 153 ff.

was further allowed to receive from his district fifteen bushels of rye, an equal quantity of barley, eight pigs, two oxen, a cask of butter and two of cheese. In one case Henry addressed the overseer of the mines as "well-born, particularly dear." Dishonesty in office seems to have been all too common. In 1563 an attempt was made to deceive Henry concerning the output of the Goslar mine, and to persuade him to abandon it, but his faithful tithe collector, Christoph Sander, told the duke the truth of the matter. The next year, the Rammelsberg mines and foundries having been very profitable, the attempt was repeated.[145] A citizen of Nuremberg and one of Wittenberg needing an agent in Goslar, attempted to bribe Sander. Failing in this they had almost persuaded Henry to lease the Rammelsberg to them, when Sander exposed the scheme by showing their written offer to him. After this episode work in the Rammelsberg was carried on more energetically than ever, and Sander's good management brought success, "though any written account of it is lacking." Henry was so well pleased that he wrote his trusted agent an autograph letter beginning *Lieber Getreuer* in which he gave him a free hand in enlarging the work, and thanked him for the big returns brought to the ducal treasury by the mine. In closing, the duke said: "We must give you the praise, next to God, for the prosperity and increase, which will never be forgotten by us."

The duke's careful management is seen in an investigation of the cost of production which he had made between 1530 and 1540, at a time when the mines brought in almost nothing.[146] The amount of metal which each shaft should produce, with the cost of charcoal, wood and labor, was estimated to the smallest detail. The result of the inquiry was a change of method which produced a profit and the establishment of a fixed price for metal, according to the mercantile theory of the period. There is no doubt that in developing this industry Henry did well for the duchy and for himself. He had the reputation of having spared no trouble or expense for anything which could improve the mines or increase their output. Owing to his energy the wealth of his line was increased, but whether, like his son Julius he carried on any commerce in metals with foreign coun-

[145] Hake, *Bergchronik*, 72 and 74.

[146] Leibrock, H. Z., 1875, 286.

tries, is unknown.[147] Rehtmeier says that Henry "understood well how to find the key to the iron door possessed by the early miners." Hake, in summing up the duke's mining enterprises says that he gave the miners charters and built gallery after gallery at great expense to aid investors from near and far. When the crops failed he provided his people with grain at a reasonable price. There is a real sincerity in the grief expressed at his death, for Henry had played a patriarchal rôle towards these mountain people and had stood in close personal relationship to them. They regretted the loss of a father rather than of a prince.

Here then, was a man, who without strong religious convictions spent the best years of his life in wars into which religious considerations entered. He seemed to love war for its own sake. Yet the instant he was at peace he threw himself heart and soul into the reorganization of his lands. We fail to understand him if we do not see the same motive underlying both sorts of activity. The career of Henry the Younger is a manifestation of the phenomenon which, as Schmoller has pointed out, was taking place throughout Germany from the fifteenth to the eighteenth century.[148] Towns and the country around them were gradually associated under one authority, and the political unit thus formed had a tendency to become an economic unit as well. The custom of dividing and subdividing the Saxon lands had persisted late but ended in 1495, when William the Younger made his sons joint heirs. From this time, the policy of each ruler was to increase his territory as much as possible and to build up a strong principality. Henry the Elder was the first to have this strengthening of his dominion definitely in view and to take a step towards his goal in trying to put down the estates.[149] This struggle is epitomized in the question of taxes. The lord constantly needed more money to administer the central government and the nobles and cities struggled against this encroachment on their old rights. Henry the Younger did far more than his father in strengthening his duchy; at the very beginning of his reign, in the struggle for the Hildesheim lands something more than mere greed of acres is to be discerned. Oehr says of him: "We must recognize in Henry

[147] Havemann, *op. cit.*, II, 499; Sack, H.Z., 1870, 307.
[148] *The Mercantile System*, 14.
[149] Oehr, *Ländliche Verhältnisse in Hzthm. Braunschweig-Wolfenbüttel*, 2.

the advocate of the absolute power of princes, the champion of the territorial principality, against the centrifugal, particularistic tendency of the century.[150] It is in this light that his quarrels with Brunswick and Goslar are to be interpreted.

When peace finally came the duke was free to organize the lands over which he at last ruled in fact as well as in name. We have seen how earnestly he sought to put the mines on a paying basis by giving them charters and codes, and by developing them with his own capital. Moreover, he tried to give all his land peace and security in return for taxes. A noteworthy part of the duke's peace labors was the establishment in 1556 of a code of justice which was the work of his chancellor, Dr. Mynsinger of Frundeck.[151] This was based on the imperial code of 1555, and aimed to replace the old Saxon by the Roman law. With slight changes, this code was issued three years later under the aegis of imperial confirmation, and in 1560 Henry secured the privilege of *non appellando*, thus establishing the independence of the courts of Brunswick-Wolfenbüttel. In the last year of his life he introduced into his territory the criminal code of Charles V.[152] Thus Henry in concentrating power in his own hands was also establishing a standard which his officials must live up to in order that the peace of his land might rest on no haphazard basis. That he was not absolute is seen in the refusal in 1560 of the estates to accept his police code on the ground that the lord might not raise the taxes of his copyhold tenants.[153]

In estimating Henry's work and character, it is necessary to keep in mind the underlying motive of all his activities, the desire to strengthen his duchy and centralize the power as far as he was able. He was developed in the hard school of the sixteenth century. He spent the best years of his life fighting with his friends, neighbors and subjects and was for long the butt of

[150] Oehr, *op. cit.*, 4.

[151] Merkel, *Der Kampf des Fremdrechtes mit dem einheimischen Rechte in B. L.*, 42. Mynsinger or Münsinger von Frundeck has been called the founder of cameralistic jurisprudence. *Allgemeine Deutsche Biographie.*

[152] Merkel, *op. cit.*, 46.

[153] Heinemann, *op. cit.*, 393. For a discussion of the sense in which the word *Polizei* was used in the sixteenth century, see Small, *The Cameralists* 436 ff.

their low doggerels; he saw his two best loved sons slain on the same day and gave no sign. What wonder that he was stern, harsh, cruel? He was not a man of high ideals and failed utterly to understand the real meaning of Luther's movement; he remained faithful to his emperor and his church, but for political reasons; he fought the League of Schmalkald for his lands, not for his faith. In taking leave of Henry, let us remember the homely, human side of his character. He was not only a politic courtier and stern fighter, but a man who could keep his temper when his horse had thrown him and made him appear ridiculous;[154] he was ready to kill the chief of the mines who had displeased him, but had a gracious greeting for the ancient miner sitting by the roadside.[155]

[154] Hake, *Bergchronik*, 72, 1.
[155] *Ibid.*, 44, 20; 65, 9.

CHAPTER V

Julius, Duke of Brunswick-Wolfenbüttel
1528–1589

Germany was still in the early stages of the Protestant revolt when in 1528 this third son, Julius, was born to Henry the Younger of Brunswick-Wolfenbüttel. Lamed by a fall in childhood, Julius was considered by his fighting father fit only for the church, and to this end was educated. He was sent to Louvain "where he learned to understand some Latin."[1] The young prince also visited Paris, Bourges and Orléans and learned to speak and understand French fairly well.[2] While Julius was still a child, Henry, who it will be remembered, was a staunch Catholic obtained for his son a canonical position at Cologne. But Julius, either in the Netherlands or in France, fell under Protestant influence and soon after his return home declared himself a Lutheran.[3] This did not particularly grieve Henry for his two eldest sons, his comrades on many a battlefield, were still alive. With their death at Sievershausen in 1553 all was changed, and the sickly, Protestant youth became the heir of the Catholic leader. The father's grief for his well loved sons turned to hatred of the younger child who seemed to him an interloper. In 1556 Henry married his second wife, Sophia of Poland, hoping for another son. When this hope failed the project of legitimizing one of his sons by Eva von Trott, in order to make him his heir, was seriously considered. For Henry's life had taught him that the duke of Brunswick must be a fighter, that the duchy could not be protected without wars and Julius, the crippled scholar, seemed utterly unfitted for the task of ruling the land, which, under his father had seen such troublous years. The enmity between father and son increased by Julius' stubborn refusal to go to mass, grew until the son was forced for a time to leave the court at Wolfenbüttel.

[1] Algermann, *Leben des Herzogs Julius zu Braunschweig und Lüneburg*, 174. This life was written in 1598 by the treasurer and private secretary of Duke Julius. It was published by F. K. von Strombeck at Helmstedt in 1822.

[2] Rehtmeier, *op. cit.*, 954.

[3] Merkel, *Julius, Herzog von Braunschweig und Lüneburg*. Z. K. G. für N.S., 1896, 25.

After his marriage to Hedwig daughter of Joachim II of Brandenburg in 1560, relations seem to have been more friendly and the first grandson proved a real peacemaker. So Julius, was recognized as the heir and on Henry's death in 1568 became duke of Brunswick-Wolfenbüttel.

Less than two months after his accession, Julius, by right of the religious peace of Augsburg, introduced the Lutheran religion into his duchy. Toleration formed no part of this policy which was inevitably resisted alike by Catholics and non-Lutheran Protestants. Not only was the celebration of the mass forbidden, but Zwinglians, Anabaptists, and all other Protestants who differed from Luther were frowned upon. The new church ordinance based on the Augsburg Confession, promulgated January 1, 1569 and revised in 1615, is still in use in the present duchy of Brunswick.[4] In introducing the reformed religion, Julius did not confiscate the monastery lands but left most of them to their owners on condition that schools be opened in the monasteries.[5] In order to get a thorough education he himself had been forced to leave Brunswick and so throughout his life he tried to provide the best advantages for his people at home. He planned schools for all the cities and villages of his dominions, but was chiefly inter-

[4] Bodemann, *Herzog Julius als deutschen Reichsfürst.* Z. N.S., 1887, 261. This ordinance is printed in the *Chur-Braunschweig-Lüneburgische Landes Ordnungen und Gesetze.* It was, however, so little enforced that even in Julius' time it was said that nowhere were the church regulations less observed than in the Brunswick lands. Krusch, Z. N.S., 1894, 130. A large part of the ordinance was written by Martin Chemnitz. A curious instance of the way in which religious and political motives were interwoven in the sixteenth century is seen in the story of the bishopric of Halberstadt. This was vacant in 1566 and Henry of Brunswick had his two year old grandson Henry Julius son of Julius, appointed to the vacancy. The Protestant Julius had scruples, especially since the income from the heavily mortgaged bishopric was small, but finally gave his consent, and in 1578 Henry Julius was installed as bishop with Catholic ceremonies. He even received the tonsure. The comment of Martin Chemnitz on this proceeding was that the duke had "sacrificed his son to Moloch." Lutheran opinion throughout northern Germany was aroused against Julius and he received protests from all sides. This episode embittered his relations with the princes of his party. Henry Julius in his turn put sons and brothers into bishoprics. Nor were these isolated cases. Bodemann, *Die Weihe und Einführung des Herzogs Heinrich Julius von Braunschweig als Bishof von Halberstadt,* Z. N.S., 1878, 241. Heinemann, *op. cit.,* II, 407, 472.

[5] Algermann, *op. cit.,* 191; Heinemann, *op. cit.,* II, 470.

ested in the grammar school founded by his father at Gandersheim. Owing to local conditions this school was transferred to Helmstedt and in 1576 Julius attained his long cherished ambition of raising it to the rank of a university.[6] He spared no care or money in carrying out his plan. In 1581 there was an attendance of more than 600 students for the new university had become popular with the young Protestant princes from all parts of Germany.

Except in religion Julius made no great change in his father's policy. Henry had always been kept poor by his wars and left a heavy debt in spite of the financial reorganization made possible by the peace of his last years. Recognizing the value of his father's work, Julius based his court regulations of 1571 on those of Henry. Their aim was to maintain a well filled treasury, always Julius' chief concern. To attain this end, peace was for him, as for Elizabeth of England, a necessity. By developing the resources of his country to the utmost Julius procured prosperity for himself and for his people. He used to say that though God had given him but a small land, every foot of it should be developed. His father had trained him to such strict economy that the practice of saving became a habit which he carried through life, and his apparent stinginess was the result of his inheritance of mortgages from Henry the Younger. The picture of his father, creeping away from his creditors at the warder's signal was indelibly stamped on the son's mind. Julius' industry was untiring and the court preacher said of him that he "worked more than even his most superior and industrious servant." His success is registered by the sum of 700,000 thalers which he had accumulated at the time of his death.[7]

By far the greater part of his wealth came from the Harz mines, which under Julius were developed and exploited as never before. We have followed the history of these mines under Henry the Younger, "who was a good miner and built the mines in the Harz forests and on the Rammelsberg at great expense and

[6] Hassebrauk, *Julius und die Stadt Braunschweig*. Jb. G. V. B., 1906, 61; Heinemann, *op. cit.*, II, 407. In the university there was a faculty of theology, of law, of medicine and of arts, directed in Julius' time by twentyfour men. Algermann, *op. cit.*, 196. The jurists lecturing at Helmstedt played no small part in introducing the Roman law into Brunswick, see below 87.

[7] Bodemann, *Die Volkswirtschaft des Herzogs Julius von Braunschweig*, Z. K. G., 1872, 237.

not without return." Immediately after the death of Henry, Julius had the mineral wealth of the Harz investigated. Years later, in 1586, a thorough study of all the mineral products of the duchy was undertaken by Hans Fischer, the noted master of mines from Heidelberg, and Julius' manager of the Rammelsberg, Erasmus Ebener, who had been called from Nuremberg by Henry the Younger. It was Ebener who made the discovery, often attributed to Julius, that zinc and copper can be combined to make brass.[8] From first to last the duke's interest in mining was unflagging. In 1574 he wrote to his stepmother: "I am possessed by the devil of mining as most princes are by the devil of hunting." The duke loved chemistry and had a technical and scientific knowledge of metallurgy which was especially useful in developing his smelting-houses.[9] His constant aim was to organize and develop his mines along scientific lines, and his success may be measured by the fact that during his reign, the mines brought in annually 20,000 thalers more than during Henry's lifetime. Every week the mine officials made a report to Julius of the output from each mine, and of the supplies needed.[10]

On his accession, Julius found the Harz mines in full operation. The control of the Rammelsberg gained by Henry in 1552 and his organization of the Upper Harz works broke the way for his son's greater undertakings. At the Rammelsberg, Christoph Sander had been manager since 1563.[11] A statement of his regulations for the mines and smelteries formulated at Julius' request a few months after Henry's death, shows that grievous abuses had crept in through maladministration.[12] In the interest of uniform good

[8] Beck, *Herzog Julius von Braunschweig und die Eisenindustrie am Oberharz*, H. Z., 1889, 303.

[9] Bodemann, *Die Volkwirthschaft*, etc., 200, 205.

[10] Algermann says, 187, that the records written on parchment were carried by the duke in two silver cases which he wore about his neck. See also Hake, *Bergchronik*, 101, 16.

[11] Hake, *Bergchronik*, 72, 19. Under Henry the mine was so unprofitable that the duke considered abandoning it. *Ibid*, 75, 1.

[12] Honemann, *Die Alterthümer des Harzes*, II, 142. These regulations are given in full by Hake, *Bergchronik*, 79 ff., and show that dishonesty in the use of wood and charcoal had been flagrant and that it was customary to give false measure of ore. As a result of Sander's organization the duke's share of ore from the Rammelsberg increased from 370 to 5,200 hundredweight a week. When a subsidy was necessary it could, under the improved conditions

management Julius ordered Sander to inspect the upper mines once a week but the friction caused by his criticisms was so great that the duke in 1572 solved the problem by giving him the control of both the upper and lower Harz mines.[13] Not content with reorganization, Julius opened new mines and enlarged and improved many which were already in operation. During the life of Henry an investigation of the Herzberge just east of the Rammelsberg had been made with a view to operating a mine.[14] Julius undertook the work anew and on a larger scale. In 1568 he called on the nobility of Brunswick and the neighboring lands to invest 200, 100 or 50 thalers each to become members of the new mining company. The response was general, and no great name of Brunswick is absent from the list of stockholders. Nobles from neighboring lands also joined, and such rulers as the duke of Grubenhagen, Franz the Elder of Saxony and the count of Stolberg. Among the investors were several women, many churchmen, councillors and mine officials in the service of Julius, and burghers of Helmstedt and Hildesheim. There were 133 who subscribed 200 thalers each, 133 who risked 100 thalers, and 24 who could spare only 50. The name of Duke Julius himself heads all three lists and the total investment was approximately 40,000 thalers. A notice sent by Julius in 1573 to each associate offered free wood for building in the mines and for fuel, and iron at a low price. If after nine years any investors wished to withdraw, the duke promised to buy back their shares. Erich of the Calenberg line, who had joint control with Julius over the "Kommunion" mines apparently took little share in their administration. In 1579 he gave Julius the right to open new mines or improve old ones in the Herzberge or elsewhere. A plan to develop mines in the Lautenthal north of Wildemann seems not to have been put into operation. The old Rammelsberg mine was enlarged by

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be paid from the profits of the smelting-houses, rather than from the duke's treasury as had been the custom. By 1575 the duke's annual income from the Rammelsberg mines and smelteries had increased "more than several thousand gulden." Hake, 97, 40 ff., gives in detail the result of Sander's reorganization.

[13] Hake, *Bergchronik*, 91, 28; 126, 25; Malortie, *Beiträge*, etc., IV, 168.

[14] Günther, *Ein Versuch des Herzog Julius zur Belebung des Bergbaus*, H. Z., 1910, 107 ff.

the building of the "deep gallery" in 1585, and its output of silver thereby greatly increased.[15]

In the Upper Harz mines Julius undertook the building of many new galleries. Of these the "Getrosten Julius Stollen" begun in 1570 were the most important.[16] They opened from Meinersberge in the Stubenthal (Steuerthal today) and were 1377 fathoms in length, probably the most extensive of the district. There were signs that mining had been actively carried on in this valley by early miners in the period closed by the Black Death. The most skilled miners of Henry the Younger in spite of their belief that "great treasure awaited him who could open this iron door," had been discouraged after long attempts to build mines here. Julius was more fortunate, for in 1570 his miners found a place where they could force an entrance into the hillside. From there mines could be opened up throughout the valley and within five years many new ones were in successful operation. The chief yield was copper and lead.[17] There was still the old difficulty connected with getting rid of the water. This seems to have been particularly bad in 1573 when the new galleries built for drainage proved to be too close to the passages of the mines, so that great damage was done by an overflow. It was probably because of such calamities that a new machine for draining the mines was installed in 1576. Towards this, Julius and his neighbor and cousin, Erich of Calenberg, joint owners of the mines, each gave thirty thalers.[18]

This energetic exploitation of the mineral resources necessitated an increased number of miners. In 1573 Julius issued a statement of the terms on which either natives or foreigners might open new mines.[19] Prospecting might be carried on only with the written permission of the duke's representative. This gained, the mine might be opened and ore washed and purified at the expense of the prospector, who, if good metal were found, received a lease. To attract workers, Julius in 1578 offered special

[15] Heinemann, *op. cit.*, II, 416.

[16] Hake, *Bergchronik*, 86, 10 ff. Also Calvör, *Historische Nachricht* I, 26.

[17] *Ibid.*, I, 26. For other mines built by Julius see Hake, *Bergchronik*, 87 11 ff.

[18] *Ibid.*, 94, 12; 110, 35. Julius also, from time to time, installed necessary machinery in various mines. *Ibid.*, 41. 22; 95, 21; 110, 30.

[19] Bodemann, *Die Volkswirthschaft, etc.*, 201.

privileges such as untaxed food, free firewood and land for gardens.[20] He preferred to employ his own people rather than strangers, who after a while left the country with their earnings. Poor city dwellers who were blessed with three, four, five or six sons, "who in these hard times live in poverty and idleness," were advised to send one of these boys to the mines. The wages to be received and the opportunities for advancement were pointed out. Of the latter there was no lack, for an intelligent industrious youth might rise from the lowest place in the stamping works to be master of the mines. Those taking advantage of this offer became citizens in the free mine towns and were exempt from all taxes and service to the lord. Thus they would become "free burghers where otherwise they must remain peasants." A wedding present from the duke and free medical attention from the apothecary maintained by him in each town were added inducements. Pastors were asked to encourage members of their congregation to become miners. A further instance of the complaisance of the duke towards this class of his subjects is seen in the terms on which he sold his manor at Zellerfeld to the municipality of that town in 1579. With it went the rights of pasturage, of selling wine, beer and corn, of preparing malt, the privilege of carrying on other business, etc., etc. Except that Julius was seeking chiefly to attract his own people, these privileges were in effect similar to the charters issued by his father.[21] There is evidence that the strangers attracted by the concessions offered by Henry and Julius did not prove desirable citizens, and in 1573 Julius was forced to issue a mandate ordering all miners to keep the peace. In this he made Christoph Sander who had charge of all the duke's mines, the judge in whatever matters were under dispute. The mine code, probably the last one issued by Henry the Younger, was to serve as guide.[22]

Under Julius the production of iron which was probably the chief source of his income reached a development previously

[20] This *Aufruf* in the Archives at Wolfenbüttel is published by Beck, H. Z., 1889, 309 ff. See also H. Z., 1906, 267.

[21] No mine charters (*Bergfreiheit*) issued by Julius have been preserved. *Ibid.*, 267.

[22] Beck, *op. cit.*, 314 ff. Detailed mining regulations governing the laborers are to be found in Hake, *Bergchronik*, 129 ff. At the end of the chronicle Hake adds much technical information concerning smelting and kindred subjects.

unknown in the Upper Harz. As in the days of Elisabeth and Henry, Gittelde was the centre of this business and the water-power and wood of the Harz made it possible to smelt and manufacture the ore in the neighborhood. The process of smelting and the form of the furnaces used in Julius' time were borrowed from Siegerland, where both had been known a hundred and fifty years before his time.[23] In 1578 the duke installed a forge at Gittelde and this town alone supplied the tools and machinery needed for the mines, smelting-houses and stamping works of the district. Here plows, tires, shovels, sheet-iron, bells, etc. were manufactured, but the place was famous above all else for artillery. On November 7, 1579 Julius issued two ordinances, one a mine code for Grund, a town some two miles from Gittelde, the other a set of rules for the iron factory at the latter place.[24] The former regulations were addressed to Christoph Sander, "the head superintendent and tithe collector," and to the people and officials of Grund, and established the conditions of labor, the privileges accorded workers and the rules under which new mines could be opened. The occasion for the regulations seems to have been the misuse and misappropriation of ore, coal and refined iron. It was for the benefit of Julius' subjects, who "weekly and daily are engaged in no other pursuit than mining." Such men were freed from all service to their lord. Anyone might open new mines on the neighboring Iberge, but no ore might be removed from the mine until it had been measured by the proper official. An overseer, living in Grund, assigned the mines whose size was limited. These were forfeited unless they were worked. A fine was fixed for any laborer, associate or driver who sold ore without the knowledge of the officials and jury of the mine city. Wood might be cut only under the direction of the forester and according to the forest regulations of the duke. Any laborers who had not

[23] Beck, *op. cit.*, 307. These high furnaces (*Hochofen*) measured twenty feet. Into them ore and charcoal were put and the refining process continued day and night for weeks. Another treatment was required to make the ore malleable. After this stage the product was more suitable for casting than for making steel. Wedding, *Beiträge zur Geschichte des Eisenhüttenwesens*, etc. H.Z., 1881, 10.

[24] Both are published by Beck, H. Z., 1889, 317 ff., and by Calvör *Historische Nachricht*, 225 ff. The *Bergordnung* for Grund is also to be found in Wagner, *op. cit.*, 1042. The original of the regulations for Gittelde is in the archives at Wolfenbüttel.

been paid by their employer might appeal to the duke's manager. It appears from these regulations that the iron mines were worked by men who rented them from the duke or occasionally by men who actually owned the ground. The laborers were paid from the proceeds of the sale of ore which was sold to the duke at a price fixed by him. The second set of regulations, those for the smelting and stamping houses at Gittelde, governed the sale of ore. Here the chief purpose was to prevent the export of metal, for the duke claimed the right of preëmption over the whole output. The product of every smelting-house had to be deposited in the prince's storehouse each Saturday. No owner of a smeltery might sell the refined ore nor might he employ any laborer discharged from a neighboring house. If he ceased to operate or for any reason failed to bring ore to the warehouse his smelting-house was taken from him and given to someone who could conduct it better. Workers in steel and smelters were subject to the same regulations. Inducements were offered to any who might improve the quality of the metal or reduce the expense of production. The smelting-houses were subject to weekly inspection by the duke's officials and the duke received a weekly report of the amount of work done by each in that time. Wood and coal were supplied in moderation. Christoph Sander and the officials under him were charged with the enforcement of these rules. Julius' greatest profits came from the smelting-houses. In 1569 the value of 60,000 hundredweight of lead produced at Goslar was 112,500 thalers.

There are no records for the copper smelteries, but the brass works at Buntheim brought in a large annual income. For ten months of 1573 the returns from this source were 14,184 thalers, and the next year the value was 54,771 gulden. In 1582 the duke contracted to supply the city of Goslar with 10,300 hundredweight of vitriol a year at a price of over 11,000 thalers.[25] Evidently during Julius' life the production of the baser metals, iron, lead and copper was far more profitable than silver mining. Brass, green and blue vitriol and cadmia were also of economic importance.[26] These products were all shipped to the prince's storehouse in Wolfenbüttel. The lead, "over five feet high and four feet thick,

[25] Bodemann, *Die Volkswirthschaft*, etc., 207, 208.

[26] Algermann, *op. cit.*, 204.

stood like a leaden wall the whole length of the market-place, and there were in the warehouse some leaden troughs ten feet square, full of vitriol, without counting what lay around in casks."

Much of the metal was manufactured near the mines. Julius was particularly interested in utilizing the discovery of Ebener, and for this purpose established a brass smelting-house where water-power was used. The brass was made into wire, kettles, chests, money boxes, spinning wheels, bugles, scabbards, daggers, swords, warming-pans, boilers, cups for wine and beer, salt cellars, trimmings for harness, etc, etc. Julius himself in 1578 planned the casting of brass traveling beds.

Lead and iron were of course used on a larger scale. In the forge established in 1578 at Gittelde, the duke had artillery for the protection of his fortresses cast in great quantities. "His Grace had at this time a firing piece sixteen feet long, made at Gittelde called 'der eiserne Wildmann,' and later a culverin thirty six feet long which could be loaded from behind." The latter which was placed in Wolfenbüttel, cost 2000 thalers, and the balls from it are said to have carried a mile.[27] The manufacture of cannon made the smelting-houses of Gittelde famous and Julius was constantly introducing new models. The duke's economy is shown by his use of slag, until his time regarded as mere waste, for cannon balls of all sorts. In 1572, 54,000 of them were kept in the fort at Wolfenbüttel, while some 78,000 were stored at the smelting-houses. This invention was very profitable. Guns also were made at Gittelde. Julius was especially interested in this branch of manufacture and made many inventions and experiments in fire-arms; to keep abreast of the times he had his agents visit the arsenals of different countries.[28] The importance of iron for the making of miners' tools and machinery has already been mentioned.

Lead was second in importance only to iron and was largely used for instruments of war. All sorts of utensils were made of it, as well as such garden furniture as benches, tables, sprinklers and

[27] Algermann, *op. cit.*, 206. A note by the editor says that these two firing pieces of hammered iron were in Wolfenbüttel until 1788 when they were sold and sent to a smelting-house. Beck, H. Z., 1889, 309 mentions a cannon called the "Wilder Mann" made by Julius which is still in the arsenal at Hanover. The effect of the general use of gunpowder on the manufacture of artillery is obvious. Bodemann, *Die Volkswirtshaft*, etc., 209.

[28] Algermann, *op. cit.*, 207, 208; Bodemann, *Die Volkswirthschaft*, etc., 211.

stags' heads. Saint Jacob's Church in Magdeburg in 1584 was roofed with lead presented by Julius. The quantity of his supplies astonished his contemporaries. In 1578 Hans von Schweinichen said: "Lead was piled in the court like a little mountain. Had they wished they might have paved the whole city of Wolfenbüttel with it instead of with stone. In times of need it could be pulled up and used. There is an incredible quantity of lead here."[29]

The copper produced by the duke's mines was manufactured locally into such articles as kettles, bowls, bathtubs and equipment for breweries. Copperas seems to have been an important by-product.[30]

Much of the silver and copper produced in these mines was made into currency by the dukes of Brunswick. The right of coining money was a privilege highly esteemed by the princes and cities of the Empire and Henry of Brunswick was following the usual custom, when in 1558 he had a thaler struck with his portrait on one side and that of the emperor on the other.[31] This general right of coinage made any uniformity of standard practically impossible. The disadvantages resulting from this confusion were the subject of frequent discussion and in 1555 the princes of Brunswick with the cities Hildesheim, Göttingen, Hanover, Einbeck, Hameln and Nordheim agreed on a uniform coinage thus conforming to a measure passed in the Diet.[32] Henry had established a mint at Goslar where he and his son after him coined the silver found in the Rammelsberg, at Zellerfeld and at Wildemann. In 1585 a mint for coining silver and copper was opened at Heinrichstadt. This was not used after the death of Julius; during the reign of his son Henry Julius only the mints at Goslar, Osterode, Andreasberg and Zellerfeld were active.[33]

[29] Algermann, *op. cit.*, 236, note.

[30] Sack, *Herzog Julius von Braunschweig-Lüneburg als Fabrikant der Bergwerks Erzeugnisse des Harzes.* H. Z., 1870, 305 ff.

[31] Rehtmeier, *op. cit.*, 938.

[32] *Reichstags Akten, Jüngere Reihe*, III, 599; Rehtmeier, *op. cit.*, 933, 934. In 1572 Julius issued an edict ordering his subjects to obey a measure regulating coinage which had been passed by the Diet in its two last sessions. Certain coins were no longer to pass as currency, and the value of others was fixed. *Ibid.*, 1010.

[33] *Reichstaler*, whole, half and quarter were coined but seldom smaller pieces. Gold gulden were occasionally coined. See Bahrfeldt, *Münzprägungen.* Z. N. S., 1912, 242.

In 1569 Julius heard that a salt spring had been discovered near the foot of the Harzburg. He had it investigated at once and soon the Juliushall salt-works were in operation. The duke, in order to get information about carrying on this new venture sent an agent to Lüneburg, the great center for salt production. He also asked William of Hesse in 1571 to send him a man skilled in the making of salt. The new industry, carried on at several places near the Harzburg, proved so profitable that in 1590 Christoph Sander, manager here as well as over the mines, wrote that the duke "had so developed the salt works, without causing hardship to the poor, that the mines gave yearly profits of from ten to thirteen thousand thalers."[34]

Julius' prosperity led him to quarry the marble which his mountains produced. He was also the first to use the alabaster of his province. In 1571 he sold to two men of Mechlin 800 hundredweight of marble and alabaster with the proviso that all pieces large enough for columns or for table tops were to be kept by the duke. On January 17, 1576 William of Hesse wrote to Julius: "The people here are entirely too poor to build with marble, but we think that if your Grace would send such materials to Augsburg or Antwerp they might be disposed of."[35] Algermann tells of the beautiful marble and alabaster altar which his patron had made for the court chapel. They began to make lime at Zellerfeld in 1574 and in 1586 an unsuccessful attempt was made to use coal in the process. The energetic duke also found among his seemingly inexhaustible resources a sort of porous granite employed in smelting. This had previously been imported from England and purchased in Antwerp.[36]

From the foregoing it will be seen that Julius spared no pains to use and develop every natural resource of his rich lands, and was in fact "a real father to his work people." He was successful in his enterprises and placed his duchy on a sound financial basis. Salt, much of it sold in neighboring provinces, brought in upwards of 10,000 thalers a year. In 1565 the Rammelsberg produced 150 marks of silver a week, and in 1572 the mines in the Stubenthal brought in twenty five hundredweight of copper ore in the same

[34] Hake, *Bergchronik*, 85, 30; Bodeman, *Die Volkswirthschaft*, etc., 202 ff.
[35] *Ibid.*, 228.
[36] Hake, *Bergchronik*, 97, 3; Jürgens, *Hannoverschen Chronik*, 254.

length of time. The annual income from smelting-houses was 150,000 gulden. Julius often said that during his reign the mines produced 20,000 thalers a year more than they had during his father's life time. But it is hard to make any equation between such sporadic estimates of his income and the modern purchasing power of money.[37] It is however, certain that the Harz became famous as the most productive mining district in Germany.

The forests were of the utmost importance in carrying on the mining industry, for wood was in the early days the only, and always the chief fuel. It was needed to build the mines, and in far larger quantities to make the fires for the smelting furnaces. Under Henry the Younger the conservation of the Harz forests had required and received attention. Free wood was among the inducements offered to the miners by both Henry and Julius, and the latter issued a forest ordinance early in his reign and another in 1585.[38] According to these the forester regulated all use of wood. Without his consent none could be cut and he had power to determine how much might be taken. The need for economy in the use of fuel is mentioned more than once in the mine ordinances issued by Julius in 1579 for Gittelde and Grund.[39] Though the forests were never a great source of income, Julius always realized their economic importance and planned to keep them up by replanting.[40]

As wood grew scarce Julius, towards the end of his life became interested in using coal in his furnaces. In June, 1585 he issued an ordinance which gave warning of the serious conditions which would follow the exhaustion of the wood supply.[41] The only solution was to find a substitute and "to that end," the duke wrote, "we have had our principality examined throughout its

[37] Zimmermann, *Herzog Julius zu Braunschweig und Lüneburg*, etc. H. G. B., 1904–5, 42. The accounts were heard once a week by the duke at Zellerfeld, Goslar or Wolfenbüttel. Krusch, *Die Entwickelung der Herzoglichen Braunschweigschen Centralbehorden*; Z.N.S., 1894, 149; Algermann, *op. cit.*, 187.

[38] Bodemann, *Die Volkswirthschaft*, etc., 198.

[39] These mine ordinances are published H. Z., 1889, 317 ff. I have not found the forest regulations published.

[40] The *Rechnungsbuch* of 1579–80 shows that the mines and smelting houses brought in 150,000 , agriculture 143,000 and the forests 9,000 gulden. Zimmermann in H. G. B., 1905, 42.

[41] Bodemann, *Die Volkswirtschaft etc.*, 204.

length and breadth and at no slight cost and trouble. At length distinct traces of coal were found in our district of Hohenbüchen; a mine was built and operated for several years at great expense, until now large quantities of good clean coal can be obtained. It has been tested and found good for burning lime and bricks and for use in the forges." The year before this Julius had given directions showing how coal could be used instead of wood for smelting and in vitriol and salt-works. He was helped by Johannes Rhenanus of Hesse, in whose country coal had been successfully used in salt works.[42] Coal seems to have been considered only a makeshift, as something which could take the place of wood in the smelting-houses and manufacturies, but not as the best general fuel. Its export was forbidden, but even with this regulation the coal-mines did not produce enough to supply the home demand.[43] On May 31, 1588, Julius sent a notice to the officials of his duchy, concerning the importation of coal from Schaumburg.[44] They were instructed to know "at what price the coal was bought, where it was taken, at what price it was resold and what salt, malt, cornmeal, bacon, beer, iron and lead was given in exchange for it." They must also be informed as to the cost of transportation and the amount of coal annually consumed. The economy of this new fuel appealed to Julius and he was very sanguine that it would do much to relieve poverty in his dominions. The duke also tried to make coke. He had experiments made with heating coal to expel the sulphur, "that so coal could be more conveniently used for heating rooms, for fireplaces and chimneys without making a great smoke and a bad smell."[45]

These various products of the Harz mountains not only supplied the needs of the duchy but left a large surplus for export. Julius was a good merchant in the disposal of his wares and made it a practice, as far as possible, to pay for necessary imports with mine products and so prevent money from leaving the country. Many of his contracts with his subjects and with foreigners have been preserved. In 1568 he made an arrangement with a citizen of Brunswick by which the latter should transport all the steel

[42] Beck, *op. cit.*, 304; Rehtmeier, *op. cit.*, 1009.
[43] Bodemann, *Die Volkwirthschaft*, etc., 228.
[44] This is printed on page 57 of the *Braunschweig Hofgerichtsordnung*.
[45] Beck, *op. cit.*, 305.

made at Gittelde to Brunswick. In 1588 one merchant had 7088 gulden worth of Julius' wares in storage at Frankfort. In 1575 a citizen of Brunswick arranged to buy all the copper ware made at Okersthurm. In the same year Markus, also of Brunswick, arranged to deliver to the duke, in Brunswick or Wolfenbüttel, butter, herrings, eels, and Dutch salmon for which he was to receive, free of transportation charges, five hundredweight of garden benches, three of lead water-pipes and the balance of the debt in white vitriol. A contract for vitriol was made in 1582 with citizens of Leipzig and Hanover. In one case the provision was made that silks and furs might be taken in payment.[46] In 1584 Julius agreed to send at the latter's expense, to August of Saxony, 5000 hundredweight of lead each year for nine years. In 1569 the duke sold to a citizen of Antwerp and one of Leipzig all the lead he had in storage at Goslar, 60,000 hundredweight valued at 112,500 thalers. The Dutch dealer, Estricks, in February 1574 bought lead and vitriol to the value of 4,500 gulden. Under the guarantee of two merchants of Hamburg he arranged in payment to buy in Antwerp, and deliver unadulterated in Wolfenbüttel before Easter, pepper, saffron, Canary sugar, olives, lemons, capers, almonds, mace and ginger. Among the most interesting of these contracts is one made with Rautenkranz of Brunswick in 1574 by which the merchant agreed to furnish Julius with fourteen sable skins at a value of 5,600 thalers. The payment was to be made in cannon balls, lead, garden benches, marble and alabaster plates, and lead water-pipes. These wares were to be received in Magdeburg or in Celle, the merchant paying the freight. The arrangement left a balance in favor of Julius which should be made up in "sables, martin, Swedish copper or linen, honey, wax, Russian leather and the like." A second contract made with Rautenkranz the next month was for an emerald, a diamond, a white sapphire, an emerald in a ring and a turquoise with gold setting, the whole mounting to over 24,000 thalers. The payment was to be made in lead, vitriol, lead pipes, etc. The prince also often exchanged his wares for rare books.[47] From

[46] Sack, H.Z., 1870, 308 ff., prints many contracts. Bodemann, *Die Volkswirthschaft*, etc., 225 ff.

[47] Merkel, *Julius, Herzog von Braunschweig und Lüneburg*, 33. Julius established store houses at which his humbler workmen could obtain provisions at a low price. These purchases were balanced against their wages

these transactions it will be seen that Julius must have been one of the greatest merchants in his dominions.

Like his father, Julius was often involved in quarrels with his largest city, Brunswick. The disputes were usually economic in nature. Before the burghers had sworn allegiance to the new prince they issued in 1569 a list of grievances many of which had figured in the long drawn out quarrel with Henry the Younger.[48] They asked their old privileges, the right of controlling the coinage and of levying taxes. They claimed that Julius had broken the contract made by his father in 1553; that the great sheep walks constituted a hardship, and that new taxes had been imposed. The mortgaged district of the Asseberg was again a bone of contention between the duke and the town. Under these demands lay the merchant spirit feeling its power and wishing to have its rights recognized. It is part of the old struggle of the city for political independence. Because Julius had other problems to meet he patched up his troubles with Brunswick. The compact between him and his most powerful, most troublesome city bears the date October, 1569.[49] The city seems to have been the victor, for Julius renounced for himself and his heirs his claims to jurisdiction over Brunswick; he gave up the right to control its coinage or finances, to collect tolls, or to demand more than one day's service a week from its yeomen. For a time after this the relations between the duke and the city council were friendly. In 1569 and 1572 the taxes for the war against the Turks were paid into the duke's treasury without protest and in 1573 the city proved very responsive to Julius' plans for internal improvements. But trouble soon recommenced. The council complained that Julius by conducting breweries interfered with its chief source of income, and claimed that the old right of the burghers to bring

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and the account kept on a tally-stick. These houses also developed into inns. Julius aimed to build such houses for the convenience of travelers at the intersections of the principal roads. This plan was not executed, probably because the duke lost between twenty and thirty thousand thalers on the establishment at Wolfenbüttel. Algermann, *op. cit.*, 208; Heinemann, *op. cit.*, II, 427.

[48] The best account of this quarrel is found in the article by Hassebrauk, *Julius und die Stadt Braunschweig*, Jb. G.V.B., 1907.

[49] This agreement is printed by Rehtmeier, *op. cit.*, 991. See also *Alterthümer Braunschweigs*, XLIX.

their wares into the duchy free of duty had been interfered with.[50] A new grievance was that the duke planned to turn the river Oker from the city.

This introduces one of Julius' pet scheme for internal improvments which was at the same time a main cause of his trouble with the city of Brunswick. In the Netherlands he had seen the value of canals,and when the transportation of his mine products became a problem, he thought that he might solve the difficulty by copying the Dutch.[51] The Oker was the chief river of the duchy and Julius dreamed of making this, and some of the streams flowing into it navigable, so that his wares could be floated from the Upper Harz down to Wolfenbüttel and further to Brunswick. In this way his goods could be transported through the Aller to the Weser and thence to the sea. He even conceived so great a project as that of connecting the Aller and the Elbe by means of a canal. Work was begun on the upper Oker and the first float reached Heinrichstadt near Wolfenbüttel in 1570.[52] "In a short time they succeeded in bringing all the wood for building, beams of sixty, seventy, eighty and more feet in length, also boards, laths and firewood, down to Heinrichstadt by water. They still bring slate, stone, sand and earth down in flat boats and use the material for filling swamps or for building, thus sparing much labor and wear on wagons and harness." Old roads leading to navigable rivers were to be improved for the use of merchants coming from the west to Saxony, and to facilitate the handling of freight from Bremen and Lüneburg.[53] In February 1571 Julius laid before the council of Brunswick, a plan to dredge the Radau, a stream flowing into the Oker, in order to transport salt from Juliushall to Brunswick. Three years later the duke called the engineer William de Raet from the Netherlands to give advice on these projects. The

[50] In 1571 Brunswick gained the permission of the duke to collect tolls on certain roads. Through this privilege the city protected certain foreign merchants so that they avoided the duke's toll. Julius carried the question to the imperial court but the case was dismissed from lack of evidence. Hassebrauk, *Julius*, etc., 57.

[51] Algermann, *op. cit.*, 203.

[52] Zimmermann, *op. cit.*, 57; Bodemann, *Die Volkswirthschaft*, etc., 217.

[53] *Ibid.*, 215. The city council of Brunswick did not object to these early measures realizing that improved transportation meant gain for the city. However, they doubted the financial success of the undertaking and refused (1572) to make a loan to the duke. Hassebrauk, *Julius*, etc., 50.

plan for making the Oker navigable for ships from the Harz to Heinrichstadt was favorably reported on, and since the whole lower Saxon circle would be benefited by such a waterway the duke hoped to attract foreign capital by means of concessions. Of course his own was the compelling interest, for in order to market his wares profitably, Julius needed to reduce the cost of transportation. Before closing with de Raet Julius explained his plan to the prelates, nobility and commons of his own land, asking their help before he appealed to foreigners. As they refused to invest, Julius, in 1575 made a contract with de Raet who was to organize a "company of Burgundians or men of other nations" who should carry on the work at their own expense and risk, but who should be rewarded with particular privileges. The purpose of the company was to make the Oker navigable for ships down to Brunswick and to make the Radau, Ecker, Innerste and some other streams passable for flat bottomed barges. De Raet was to receive yearly 400 thalers worth of mine products, and 10,000 thalers in cash on completion of work in the Oker and Radau. However, these plans failed because it was found impossible to attract the necessary investors; so Julius was forced to undertake the work at his own expense, employing de Raet as his engineer. The Oker was made navigable as far as Wolfenbüttel, but when it came to carrying the work down the river through Brunswick, the city through jealousy of the towns farther up-stream, objected vigorously.[54] When all other attempts failed, the city in March, 1577, obtained an order from the Emperor Rudolph II to have the work stopped. The jealousy and short-sighted particularism of the period is further shown in the refusal of William of Lüneburg to have the work carried on in his lands, and in the protest of the duke of Grubenhagen against making certain of his streams navigable for wood barges.[55] Because Brunswick objected so strongly to the plan Julius decided to build a canal around the city and so open a way down the Aller to Celle and further, to Bremen on the Weser.[56] Julius' greater plan would have been of the most lasting benefit to all the lands involved, but it could not be carried through unless men were willing to forget their petty jealousies

[54] Bodemann, *Die Volkswirthschaft*, etc., 214 ff.

[55] Hassebrauk, *Julius*, etc., 62; Algermann, *op. cit.*, 217; Bodemann, *Die Volkswirthschaft*, etc. 224.

[56] Algermann, *op. cit.*, 205.

and work for the common good. The odds against this were too great, and Julius was forced to abandon his visions and be content with having made his capital Wolfenbüttel and his pet town Heinrichstadt easily accessible to his mines and forests.[57]

The foregoing shows that the agreement made in 1569 between the duke and Brunswick did not settle all the points in dispute. In addition to the "Oker question," there were still the old problems connected with brewing, taxation, etc. From 1569 the city had complained that Julius, by conducting breweries, interfered with the business which Brunswick had come to regard as her monopoly. The duke's products more and more drove those of the city from the markets of the district, and in 1574 he added insult to injury by raising the excise on beer, in order to obtain money for waterways and for his new university.[58] Another subject of disagreement was that of the mortgaged districts, an inheritance from the time of Henry the Younger. This matter came before the imperial court but no decision was given during Julius' reign; the city meanwhile remained in possession of the disputed territory. In 1578 Julius was ordered by the imperial court not only to recognize the right of Brunswick to be free from ducal taxation, but to return the amounts already collected from the unjust increase of taxes. The duke evidently did not take the command seriously for in 1581 the burghers complained that repayment had not been made. The details of this long story of endless bickerings are tedious and sordid. On the whole the duke's increasing wealth and his influence with the emperor gave him the upper hand, though the burghers, recognizing his reluctance to settle the dispute by force, took advantage of his "war shyness" and allowed themselves great liberties. The Jewish question but increased the difficulty. Julius, because the Jews were such clever merchants, allowed them to settle in the city of Brunswick while the citizens denied that he had the right to take this action.[59] Another complication arose because Brunswick

[57] In connection with his plans for navigable waterways Julius had new roads built and old ones kept in repair. He threatened to dismiss any officials who neglected necessary improvements on highways over which his wares must be transported. Bodemann, *Die Volkswirthschaft*, etc., 211 ff.

[58] Hassebrauk, *Julius*, etc., 57. This was done in opposition to a decision of the Diet at Regensburg.

[59] Hassebrauk, *Julius*, etc., 67. Julius' treatment of the Jews may be interpreted as part of his good business policy. Henry had banished all

was jealous of the new city, Heinrichstadt, which the duke took the greatest interest in building and fortifying. In 1581 the imperial taxes were deposited by Brunswick in the treasury of the free city of Leipzig instead of being given to Julius. Two years later the malcontents claimed the rights of a free imperial city from the emperor. It was not until August, 1587 that a settlement was reached, on the basis of the old agreements of 1553 and 1569.[60] But the event had proved that the terms of both left many opportunities for trouble. Injustice on the part of the duke would be sure to cause dissatisfaction on the part of the burghers in the future as it had done in the past.

A contributing cause to the unpleasantness between Julius and Brunswick was the duke's interest in developing a trading town adjoining the fort at Wolfenbüttel. He called the settlement Heinrichstadt in honor of his father and planned to use it as a depot for mine products. In vain, the city of Brunswick appealed to the emperor against a possible rival. As early as 1576 Julius gave the city special privileges such as those of holding markets, brewing and baking; these were confirmed in 1578 by Rudolph II.[61] Further inducements to settlers were published in 1584 and 1585. To the wealthier classes "nobles, soldiers, scholars, companies and merchants" who would build a "knightly, noble, dwelling" the duke offered land enough for house, courts, brewery and bakehouse. He was also willing to provide building material, asking four per cent interest until the debt should be paid. To encourage settlers all articles necessary for household use could be brought into the city free of taxes. Merchants were also allowed the same exemption for their wares. Free quarterly markets were established so that foreign and native dealers might know the best time to transport their goods. These sales lasted for twelve days and the merchants and their wares were under government protection during that time. Markets were held

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Jews and forbidden them to trade in or even to pass through his dominions. When Julius failed to reverse this action they appealed to the emperor. Maximilian (Jan. 20, 1570) ordered Julius to allow them to pass through his lands on payment of the customary tax. An edict of Julius dated 1578 allowed the Jews to trade in mine wares and assured them safe conduct. Wiener, Z. N.S., 1861, 248.

[60] Hassebrauk, *Julius*, etc., 74.

[61] Rehtmeier, *op. cit.*, 1022; Zeiller, *op. cit.*, 209.

each Tuesday and Friday. These were chiefly for food-stuffs but velvet, silk and other wares might be bought and sold. Julius was particularly eager to attract foreigners to Heinrichstadt. The privileges were published in Latin and French as well as in German, and English; Scotch and Portuguese merchants were named among those who might enjoy them. Special arrangements were made for the payment of foreign debts. A good many settlers from the Low Countries were attracted but otherwise few foreigners came.[62] The charter of 1585 was addressed to all classes of people. This repeated the promise of weekly and quarterly markets. In the list of articles which might be bought and sold were enumerated all sorts of native food, wood and coal and merchants' wares. The city of Brunswick protested to the emperor that this charter "had gone out in open print, and one plans to build great new cities and to establish workmen where before there were none." Again, the city whose greatest wealth came from trade and brewing appealed in vain to the emperor against this dangerous growth of Wolfenbüttel. As previously stated, the settlement between Julius and Brunswick which was reached in 1587 was on the basis of the old agreements in which the new city was not mentioned. In spite of the jealousy of Brunswick Heinrichstadt prospered and was later known as Juliusfriedenstadt.

There were also difficulties with the city of Goslar during the reign of Julius. It was natural that this city, still smarting from its defeat by Henry, should resent any encroachment on its rights. The protests began when the duke (1571–72) built a foundry and undertook the manufacture of vitriol just outside the city gate. An even greater financial hardship was the installation by the duke of official scales which took from the city the profitable task of weighing the Rammelsberg metal. The duke also set up near Goslar an apothecary shop, a fulling-mill, a bakery and similar enterprises. These and other grievances were frequently brought to the imperial court but at length all matters of dispute were peacefully compromised.[63]

[62] The *Heinrichstetische Privilegia* are published in the *Braunschweig Hofgerichtsordnung*, a contemporary collection. See also, Algermann, *op. cit.*, 190, and Heinemann, *op. cit.*, II, 425.

[63] Heineccius, *op. cit.*, 515, 516; Honemann, *op. cit.*, II, 165.

Julius administered the government of his lands with the same orderly thoroughness seen in his conduct of the mines. Though he occasionally summoned the estates to meet him the assembly had little real power. The duke reorganized the government offices and put them in charge of trained financiers. The chancellor followed the ordinance of Henry the Younger.[64] The management of mining affairs and public works and the oversight of the officials was undertaken by the prince himself. Julius was one of the first of German princes to realize the need of a comprehensive reform of the system of taxation which was a survival from the Middle Ages. He aimed to replace the old payments in labor and in kind by a land tax which should protect the peasants and farmers. Knowing that the nobles would oppose this reform, as they had a similar project of Henry's, Julius sought to interest other German princes in the problem, and consulted such men as the electors of Saxony, of Brandenburg, and of the Palatinate. All recognized the need of reform but none brought it to pass. Though Julius did not succeed he at least broke the ground for his successors.[65]

One of Julius' most difficult problems was to make effective a uniform system of justice which should replace the old Saxon customs by the Roman law.[66] Henry's code of justice drawn up by the humanist, Dr. Mynsinger and the penal code of Charles V which the duke introduced into Brunswick had aimed to accomplish the same end. Julius in 1570 at the *Landtag* at Salzdahlum confirmed his father's act and commanded the judges to follow this code which should apply "to all our subjects."[67] In 1576 he established a university at Helmstedt with a faculty of jurists whose influence was of course in favor of Roman law.[68] Among the

[64] The ordinance was revised in 1572 and served as a foundation for the administrative system used in Brunswick and Hanover into the nineteenth century. Krusch, *Die Entwickelung der Herzoglichen, Centralbehörden*, Z. N. S., 1894, 143, 153. In the sixteenth century the early cameralists Osse and Löhneyss influenced electoral Saxony where both had held office. The latter entered the service of Julius' son Henry Julius in 1583, as master of the mines. Small, *op. cit.*, 40.

[65] Heinemann, *op. cit.*, II, 411–413.

[66] *Ibid.*, II, 409.

[67] This code was published in the *Braunschweig Hofgerichtsordnung*, Wolfenbüttel, 1571. See above, 64.

[68] Merkel, *Der Kampf des Fremdrechtes mit dem einheimischen Rechte in Braunschweig-Lüneburg*, 46. See above, 68 n 6.

best known of these men was Doctor Joachim Mynsinger who had served Henry as chancellor and held the same office under Julius until 1573 The high court, a court of appeal, was composed of nine men and met either monthly or quarterly.[69] Julius did not preside over this court as his father had done but received the reports of its decisions from his secretary. To save expense Julius reduced the number of sessions held by the court as well as the length of each session but it lost prestige by moving from place to place at irregular intervals. In 1572 the emperor granted to Julius the privilege of *non appellando* which had also belonged to Henry.

Though he had no intention of going to war, Julius undertook a reorganization of the army. He aimed to replace the disorderly knights and mercenaries by a popular army to be used for defensive purposes. The burghers were already trained to defend their cities, but the duke planned to arm and drill the mass of his subjects, so that an army should be ready for any emergency. Guns from the iron works at Gittelde were furnished at slight cost. At a given signal the citizens were ordered to appear, fully armed, at the meeting place. Shooting matches, in which several cities took part, were often held. To improve the quality of the arms manufactured at Gittelde Julius sent agents to inspect the works at the most important manufacturing centers, Goslar, Augsburg and Nuremberg. One result of this system was that the arsenal at Wolfenbüttel became so stocked with arms and artillery as to excite the wonder of all beholders.[70]

Four years before his death Julius inherited from his cousin, Erich II, the Göttingen and Calenberg portions of the Brunswick lands. With them went part of the county of Hoya. Though this accession of land doubled his territory, Julius assumed his new responsibilities with reluctance.[71] These lands were burdened with debts, their resources were exhausted and the task of reforming the administration and amalgamating the new territory with the orderly Brunswick-Wolfenbüttel was appalling. In accepting the inheritance the duke was undoubtedly influenced by the fact that he had loaned 300,000 thalers on this property. On the other hand the people living in Calenberg and Göttingen dreaded being

[69] Krusch, *op. cit.*, 131.
[70] Heinemann, *op. cit.*, II, 410, 411.
[71] Algermann, *op. cit.*, 210; Heinemann, *op. cit.*, II, 432.

under the rule of such an orderly benevolent despot as Julius. The principal cities, Göttingen, Hanover, Northeim and Hameln thought fearfully of the difficulties which had arisen between Brunswick and Julius, while the nobles looked forward dubiously to the time when they should lose the lands they had gained through mortgages. Julius held his first *Landtag* in the new territory at Gandersheim in the fall of 1585 and at once began the work of reorganization. Though many of the people were Catholic the new ruler ordered that the word of God be preached according to the Augsburg Confession and introduced his own church regulations, "that the two great principalities of the Brunswick lands . . . might be one and alike in religion."[72] The duke wanted uniformity of law as well as of religion in his lands and in 1585 he appointed a commission to consider how one system of laws might replace the existing confusion of the imperial and the Saxon codes. The financial problem was Julius' greatest difficulty in his new territory but the estates finally agreed to renew the old taxes and to increase them if necessary in order to wipe out the debts of the country.[73] The nobles made so much trouble about their mortgages that some cases were brought before the imperial court, but finally Julius succeeded in this last most difficult task, and at his death left his lands free of debt and with a surplus in the treasury.[74]

Julius was too good a housekeeper to take an active share in affairs outside his own dominions. He had little interest in the politics of the Empire and played no part in solving the great international problems of his age. As a rule any correspondence with people outside his dominions meant that he desired a new market for his mine products. A narrow interest in religious matters could sometimes be aroused, but the duke's sympathy included only Lutherans. Like his father, Julius was devoted to his imperial masters and felt that the welfare of Germany was one with the welfare of the emperor. In his will (1582), a lengthy document of instruction for his heir Henry Julius, Julius exhorted

[72] Rehtmeier, *op. cit.*, 1060.

[73] Heinemann, *op. cit.*, II, 435.

[74] Soon after the death of Julius the Grubenhagen division of the Brunswick lands was also added to the holdings of the Wolfenbüttel line. This line also fell heir to the territory of several counts and absorbed various secularized bishoprics. *Ibid.*, II, 471.

his son to remain faithful to the house of Austria, and reminded him of the evils which befell Henry the Lion through his quarrel with Barbarossa.[75] The friendship between Julius and Maximilian II (1564–1576) began when the former was in Vienna, driven from Brunswick by his quarrels with his father.[76] An interesting correspondence between Julius and Maximilian's councillor Lazarus von Schwende has been preserved. These letters reveal the warm friendship which existed between the duke and the statesman. Sometimes they were concerned with business, for Henry the Younger had given von Schwende shares in the Harz mines. Von Schwende always commented on the great political issues of the day, the Turks, the Armada or the religious difficulties in France. Julius was less interested in these matters, and like most other German princes of his time, showed a fatal apathy towards constitutional questions. Every Protestant ruler should have been keenly alive to the struggles of the Dutch against Spain, and of the Huguenots for freedom of conscience, but Julius had no sympathy with Protestants who were not Lutherans. After the massacre of Saint Bartholemew the Landgrave William of Hesse proposed an offensive and protective union of all Protestant German princes. Julius refused to join because some members of such a league would not accept the Augsburg Confession.[77] Even after the conquest of Antwerp by the Spaniards Julius declined to listen to a second similar proposal. The project of an alliance between French, English and German Protestants was under frequent discussion. In 1577 Elizabeth of England sent Robert Bell to confer with Julius on this subject. After consulting his adviser, Martin Chemnitz, Julius decided that he could not recognize non-Lutherans as religious brothers. In the same year he decided not to join a union of Germany and France against Spain on the ground that it would be "not so much in the religious cause and against papists as against the Spanish king and his possessions in the Netherlands."[78] Julius, like most German princes, failed to understand the menace of the Catholic

[75] Rehtmeier, *op. cit.*, 1039.

[76] Bodeman, *Herzog Julius von Braunschweig als deutscher Reichsfürst.* 5, 18, 63, 76.

[77] Heinemann, *op. cit.*, II, 428.

[78] Bodemann, *Herzog Julius*, etc., 28, 31, 34.

reaction. His father's career had taught him that when a prince of Brunswick became involved in European politics his duchy suffered. He maintained his policy of peace at any price, but in so doing renounced the opportunity of playing his part as a prince of the Empire in solving the problems of the day. Julius' short-sighted selfish policy was characteristic of the men of his class and period. The next generation paid the penalty of such particularism in the horrors of the Thirty Years' War. In this connection, Hassebrauk writes: "While to the west, the world was in flames, Germany lay in deepest peace for generations. But it was not a healthy blessed peace. Germany, religious, political and social was sunk in Philistine pettiness, and the proud name of German liberty served only to cloak hateful particularism."[79] Had Germany profited from the experience of the French and of the Dutch she might have been saved the disaster of the Thirty Years' War.

A period of reaction followed the Peace of Augsburg. The enthusiasm of fighting for religious ideals and incidental economic and political betterment had spent itself. The princes were weary, their interests were not those of the Empire but of their own lands. It was not a time of brilliant international achievement for Germany, but one of prosperity for most of the German states. It produced a generation of enlightened, educated rulers, intent on furthering the well-being of their own lands. Consequently the history of the late sixteenth century is to be found not in the acts of the Diet nor in the decisions of the imperial court, but in the development of the individual states. Only the externals of the Holy Roman Empire remained.

In his preoccupation with the concerns of his own lands Julius may illustrate the type produced by his period. He was interested not only in increasing the material prosperity of his land and people, but in developing their higher life. Hardly a scholar himself, he spared no pains in gathering a group of the most learned men of the time at his university at Helmstedt, while the library at Wolfenbüttel was his pride and delight. Julius' interest in chemistry was nevertiring, yet the limits to his science may be seen in his investigations in alchemy.[80]

[79] Bodemann, *Herzog Julius*, etc., 48.

[80] The Sommering affair shows how his greed got the better of his judgment. For three years this charlatan and his followers imposed on Julius who believed that they could make gold from baser metals, had discovered

Julius' exclusive interest in his own lands developed in him a paternalism which was almost patriarchal. He had the point of view of the most enlightened men of his time and regarded his subjects as incapable of initiative. No detail connected with the court expenditure, the mines or with any activity of his people was too trivial to engage the ruler's attention. He issued an edict directing what sights should be shown to strangers in Wolfenbüttel (1578),[81] another exhorted kind-hearted people to donate money and corn to those whose crops had been destroyed by hail, while ordinances directing precautions against fire were frequently issued. Subjects of Julius were forbidden to go into military service with other lords (1585), and employers and gilds were instructed to give every artisan who left them a written recommendation or explanation.[82] The duke guarded the welfare of his subjects as if they had been children; but though ready to hear the troubles and complaints of his humblest subject, Julius never allowed the chasm which separated prince from underling to be forgotten. The duke had a tremendous capacity for work himself and demanded long hours of conscientious service from his employés. It was his custom to write until ten or eleven o'clock at night,[83] and his councillors were expected to be on duty at six in the morning in summer, and at seven in winter. It was entirely in character that Julius should not care for the chase which had been his father's greatest pleasure. Though the son occasionally hunted he never allowed the sport to increase the burdens of his subjects. He used to say that he wished that more intelligent people and fewer wild animals dwelt in his lands.

Julius was parsimonious in the administration of his court and the management of his children, yet when expenditure would redound to his credit or profit he was free enough. His palace,

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the secret of eternal youth, and knew of marvellous devices to make mining profitable. This credulity was shared by most princes of the time, but the experience rendered the duke of Brunswick suspicions of later offers to effect miraculous cures. See Algermann, *op. cit.*, 200.

[81] Small, *op. cit.*, 5; H.Z., 1889, 246.

[82] *Braunschweig Hofgerichtsordnung.*, 52, 54, 55, 50.

[83] Algermann, *op. cit.*, 183, 233. Many of Julius' memoranda in a particularly illegible hand, have been preserved. He carried on a varied correspondence, usually dictating to a secretary according to the custom of the time. Z.K.G., 1875, 232.

his university, his jewels and furs show this phase of his nature. In his will, a characteristic document, Julius exhorted his heir, Henry Julius, to husband his accumulated treasure of 700,000 thalers.[84]

Algermann paints a pleasant picture of Julius' peaceful old age.[85] In summer it was his custom to sit with his family and friends on a balcony of the palace which commanded a view of all traffic to and from the stables, brewery and bakehouse. From this vantage point, surrounded with song birds, the prince passed his time at chess or in conversation, observing meanwhile the activities of his household. These last peaceful days were characteristic of Julius' whole life, which forms a striking contrast with that of his father, and shows what changes a generation could bring in the Germany of the sixteenth century.

The reign of Julius marks a peaceful lull between the religious wars of the sixteenth and those of the seventeenth century. The terms of the Peace of Augsburg had fostered particularism rather than a common national endeavor, and it was as a true child of his age that Julius thought first of Brunswick and rarely of the Empire. To administer his inheritance wisely and to develop its every resource was first and last thought. His motto: *Aliis inserviendo consumor*, was as appropriate as that of Henry, and Julius did, in truth live up to it. This aim developed the pronounced paternalism in which the welfare of his subjects was dear to the prince, but in which he, not they, judged what should further this welfare.

[84] Rehtmeier, *op. cit.*, 1039 ff. This will, written in 1582 when Julius feared the plague, is a voluminous document directing the actions of the heir in every possible contingency.

[85] *Op. cit.*, 89.

CHAPTER VI

Life in the Mine Towns

Like the typical chronicler of the Middle Ages Hake shows a keen interest in the unusual and supernatural. In spite of this emphasis on the extraordinary, he presents a reasonably complete picture of the daily events in these Harz mining towns, and reveals not only his own, but the general attitude towards life. A native of the Harz, Hake was made pastor at Wildemann in 1572, four years after the death of Henry the Younger.[1] As his chronicle covers the years from 1505 to 1583, his testimony about places and people was often that of an eye witness of the events described.

These communities, Grund, Wildemann and Zellerfeld owed their existence to the mineral wealth of the neighborhood. The district was hilly and heavily wooded. Zeiller's *Topographie* published a hundred years after this period shows in its beautiful copper plates, these hamlets quite surrounded with forests, with but few clearings for farming. That the need of more extensive agriculture was felt is proved by the offer made in 1553, of freedom from feudal or court service for any one who would cultivate the land or make a garden. Cattle, sheep, pigs and geese were valued assets of the villagers, but breadstuffs were imported, probably from Henry's more fertile lands to the north in lower Saxony. So anxious was the duke to provide supplies for the miners that he arranged for weekly markets to which any one might bring, free of taxes, "all things needful to the mine people."[2] The miners brewed their own beer, ground corn in their own mills,[3] and might sell imported liquor free of excise. Water was abundant in these mountains, and was piped through the towns early in their history. The warm springs had the reputation of being medicinal and very likely it was this water which was used in the frequently mentioned public baths.[4]

[1] Günther, *Die Grundung der Bergstadt Grund*, etc. H.Z., 1906, 43.
[2] *Bergfreiheit* of 1532, 1556. H. Z., 1906, 294 ff.
[3] Hake, *Bergchronik*, 52, 43: 53, 17: 56, 30, etc.
[4] *Ibid.*, 46, 16.

These communities were essentially law abiding; they had no love of fighting and were not only disturbed but bored when their towns lay in the path of any of Henry's numerous wars. The city of Goslar, Count Mansfeld or other enemies of the duke frequently made these inoffensive artisans the object of attack. In administering internal affairs Grund, Wildemann and Zellerfeld seem to have held pretty consistently to their own standard of justice, for even during the years when the Schmalkald leaders ruled Henry's land, they were allowed, after a protest, to follow their own customs. The judge, one of their chief officials, was assisted by a jury in the rigorous punishment of wrong-doers. Petty offenses were disposed of locally, but the duke had jurisdiction in criminal cases, and frequently in others.[5] Punishments, even in times of peace, often were severe out of proportion to the crime. An instance of this is the case of the manager who, having failed in trying to drain a mine of water, was imprisoned in Henry's castle for eight days, and deprived of his office.[6] Murder was punished by death, yet there were exceptions to the strict enforcement of the law. An instance is the case of Nickel Dorman, who having killed a comrade, was released in answer to the prayer of a young girl.[7] On one occasion when two murderers succeeded in making their escape, Hake comments: "Though they may have escaped punishment in this world, they will not be able to avoid that of the last day." Cases are recorded where the individual rebelled at the decisions of the court. At one time a miner shot and wounded the judge who had condemned him, and because he had "striven wilfully against a magistrate," the militant lost his head. Again, the murderer was freed because his victim "had given him cause."[8]

The district was not free from labor troubles. An instance is related of three miners, who, having caused an uproar because they were dissatisfied with their pay, were taken as prisoners to Wolfenbüttel and released only on the intercession of friends. When in 1565 the miners wanted new contracts, "so that they might clothe themselves," and complained that the officials were unfair to them, the head of the mine responded by

[5] Hake, *Bergchronik*, 51, 1; H. Z., 1906, 299.
[6] Hake, *Bergchronik*, 43, 9; 95, 21.
[7] *Ibid.*, 64, 8; 56, 17.
[8] *Ibid.*, 58, 10; 62, 9.

raising their pay and giving them better terms.[9] In 1555 the dissensions between the owners of the smelting-houses connected with the Goslar mines and their employés took on so serious an aspect that Duke Henry was forced to interfere, and decreed that laborers must be engaged for a certain time at a specified price. Any smelterer breaking his contract was liable to a fine of fifty thalers, and no owner of a smelting-house could raise or lower wages without the knowledge and consent of all the other proprietors of such houses. Objection to the duke's jurisdiction was made on the ground that citizens of Goslar were amenable only to the laws of the council of that free city, but in this case duke and council worked together for the general peace (1555).[10] An incident which shows that business principles were well established in these communities is that of the tithe collector who had sold Hans Wolff sixteen florins worth of lead on the security of his house. The account being unsettled, the creditor appealed to the chief officials and was allowed to foreclose on the miner's house.[11]

Among the people attracted to the Harz by Duke Henry's inducements were some who lived evil lives. Evidently adultery was no new problem for a mining town, but in 1539 Wolf Seitel, the superintendent of the mines, instead of protecting such deeds brought the offenders to justice. All the culprits suffered, the women being subjected to the torture of walking over sharp stones, while the men were fined or imprisoned.[12] An interesting case of the legal enforcement of a man's promise to marry is that of Christoph Stoll, who seemed on the point of jilting a girl in Regensburg when the authorities intervened and held him to his word.[13]

The whole spirit of the district seems to have been against the employment of men from other localities. When such came seeking work which it was not convenient to give, instead of turning them bluntly away the authorities directed them to a shaft called "The Glutton" where the ore was so poor that after a man had worked a shift "had the ore he won been bread it would

[9] Hake, *Bergchronik*, 76, 10 ff.
[10] *Ibid.*, 62, 30.
[11] *Ibid.*, 60, 22.
[12] *Ibid.*, 46, 12.
[13] *Ibid.*, 52, 6.

not have been enough to satisfy him." The plan was successful for most of the men on whom this experiment was tried worked only one shift, others hardly half that time before going on their way.[14]

These groups of hard working men and women were not without an interest in the higher life. As has been seen they were keenly Lutheran; they were also ambitious that their children should receive some sort of education, and the schoolmaster's place seems to have equalled in importance that of any other official. In one instance the teacher at Zellerfeld came from Bremen; in another the chronicler speaks of the schoolmaster as "a well taught fellow."[15] In 1555 Jacob Berward held the office of town clerk and was at the same time teacher of the children at Zellerfeld. He was also a musician and introduced the part song, a novelty in the district. Two years later the same man played the comedy of King Ahasuerus and Esther with the burghers' children, and later dramatized the story of the Ten Virgins. There seems to have been a good deal of the love of music among these people. More than once the schoolmaster is spoken of as being a good musician, and an organ was an important possession. The first one was set up in Zellerfeld in 1564; it cost thirty thalers and the organist came from Goslar. Not to be outdone, the people of Wildemann put a more costly organ in their church the next year. With prosperity the miners grew ambitious, for in 1569, after a fire, another organ was installed at Zellerfeld at a cost of 160 thalers.[16]

Shooting was a favorite sport. Contests were frequently held in the mine towns during the reign of Julius and these the prince encouraged by offering prizes.[17]

A visit from the duke was naturally an occasion for celebration. Once, with his wife, Henry spent the night at Zellerfeld. After the customary gifts of beer and wine, not only the elders but children turned out to do honor to the rulers. A company of boys armed with wooden swords and carrying as a standard a piece of leather attached to a pole marched over from Wildemann. The children of Zellerfeld were similarly armed and a mock battle

[14] Hake, *Bergchronik*, 45, 10.
[15] *Ibid.*, 57, 25; 62, 14.
[16] *Ibid.*, 75, 15; 76, 25; 86, 3.
[17] *Ibid.*, 46, 16; 111, 40.

in the market place ensued. Presently the fun threatened to become serious. The wooden swords drew blood, and "almost some remained dead," when the duke, thinking the sport had gone far enough, called from the window where he stood, to have the young fighters separated.[18]

This is only one of many stories related by Hake, which illustrate the friendly relations existing between the duke and his people. Of course the ruler is always spoken of with the respectful circumlocution of the period. This is purely ceremonial; the truth seems to be that there was nothing of servility in the miners' attitude. They were an independent, self-respecting class, able and prompt to stand up for their rights. Henry often came to the mines while he was staying at his castle in the neighborhood.[19] Early one morning in 1556 Henry rode over unannounced to Wildemann for an inspection and found the tithe collector Hans Hansen "still sleeping in the feathers." Receiving no answer to his calls, the duke rode on to the mines, leaving word for the official to follow him. Meanwhile the children gathered in the little streets and mustered courage to greet their lord. Henry was gracious to them, but to one of his companions he remarked: "The children receive us, we should like to see the elders do as much." When the poor collector finally overtook the ducal party, he was forced to admit that he had been drinking the night before. The incident was closed with a reprimand.[20]

When Henry and his second wife, Sophia of Poland, visited Wildemann in 1563, they found the miners drawn up in ranks awaiting their arrival. When the duke spoke to them, they closed in a circle around their lord who talked as a father might to obedient children. They had chosen Hans Siefert for their spokesman "because he had often followed the duke to war and knew with what modesty and reverence one answers high potentates, princes and lords." But in spite of this training the poor fellow misspoke himself and was covered with confusion, while

[18] Hake, *Bergchronik*, 71.

[19] It was at this castle of Stauffenberg that his mistress Eva von Trott lived from 1532 until 1542 when Henry had her removed to the more secure castle of Liebenburg. Heinemann, *op. cit.*, II, 356, 359.

[20] Hake, *Bergchronik*, 64, 11 ff. This anecdote, and several others borrowed from Hake, are published, in the Neues Vaterländische, Archiv des Königreichs Hannover, 1829. Their source is not given.

the miners were indignant that the ceremony had been ruined. The day was saved by Henry, who came to the rescue with a gracious speech.

About the same time (1562) the people of Grund fell into disgrace with their lord. Henry, was so incensed at their shooting big game that he had determined to take their privileges from them. The offense was especially flagrant because in 1559 he had issued a strict edict forbidding any but the nobility to kill even small game.[21] In anguish of spirit, the judge, jury and commons of Grund begged their neighbors in Wildemann in the name of their common flag to help preserve the precious charter. Through the good offices of the master of the mines the duke finally made peace with these subjects who had so impertinently invaded his prerogative. It was in cases such as this, where his people had overstepped their rights or been unfaithful or inefficient in official duty that the sternness of Henry made itself felt. Such was the case of the manager already referred to, who boasted that with his newly installed machine he could drain the mine "even if the whole mountain were full of water." His failure, or perhaps his boldness, was punished by an imprisonment of eight days and the loss of his office. An instance is recorded in which for some unknown reason Henry was displeased with the superintendent of his mines. One day the two enemies chanced to meet and the duke would have killed his employé had not the chancellor come between and so allowed the offender to escape. This seems to have been exceptional, for as a rule the duke was on very friendly terms with his officials.[22] On one occasion he wrote an autograph letter to the tithe collector, Christoph Sander of Goslar, thanking him for his industry and recognizing that the prosperity of the Goslar mines was due to Sander's good administration. The case of Peter Adener will be remembered. He was summoned to Gandersheim to give his opinion on possible improvements to the mines. With perfect confidence and self-respect, and without servility the miner gave his expert advice and even corrected the duke concerning the way in which the plans should be carried out.[23]

[21] *Braunschweig Hofgerichtsordnung*, 33.

[22] Hake, *Bergchronik*, 44, 17; 75, 19.

[23] *Ibid.*, 61, 8.

Nevertheless, the lord required that his superior power be recognized. Once, hearing that his inspector, Franz Preuss, was ill of the plague, Henry rode to his house, opened the window and sticking his head in, said, "My Preuss, how are you?" The dying man answered, "Not too near, my lord, not too near, I have the plague," and indicated that he was beyond ducal help. This frankness, even from a man in extremity, angered the noble visitor, who admitted no limits to his power.

In spite of Julius' great interest in the mines Hake records no visit of inspection. During the years between 1583 when the chronicle ends, and 1589 the year of the duke's death he may have visited the Harz district.

CHAPTER VII

The Relation of the Harz Mines to Trade and Trade Routes

Henry the Younger came into his inheritance five years before Charles V was elected emperor. What strength still remained to the Holy Roman Empire was to be found in its members, not in the central government. The cities were the scenes of the greatest activity and expressed their vigor and life in their commerce which, while keeping to the old routes, reached out for new ones. There were German factories in Antwerp and German ships went to India (1505). This widespread trade made possible the great undertakings for which large capital was necessary.[1] The end of the fifteenth century was a time of general prosperity when all classes expected to maintain a high standard of living. The galleons loaded with precious metal from America began to sail into European ports and the price of metal sank while that of commodities rose. By 1550 the value of metal was cut in half. In Brunswick the price of food did not increase appreciably before that time and the real effects of the low price of metal were not felt until the use of the overland trade routes began to fall off.[2] In spite of the discovery of the sea route to India a flourishing trade in eastern goods still passed over the Alps from Venice.[3] Generally speaking, the great trade routes of Germany followed an east and west or a north and south direction. They were dependent on topography, following the navigable rivers or river valleys and using the lowest passes across hills and mountains. In the sixteenth century, because of the heavy tolls, the rivers were less used than formerly and the princes made constant efforts to render safe the increasing travel by road.[4] The Harz

[1] Kaser, *Deutsche Geschichte im Ausgange des Mittelalters*, 436.

[2] Von Bülow, *Beiträge zur Geschichte der Braunschweig-Lüneburgschen Lande*, 163.

[3] Kretschmer, *Historische Geographie*, 504, 505.

[4] A complaint against a proposed general imperial customs tax, presented to the Diet by the German cities as early as 1523, protested against the customs already exacted by the Empire of all merchants and dealers. They foresaw, that to avoid the heavy taxes, foreign merchants would go to

offered an obstruction to these trade routes which divided and went around the mountains. Those which passed through Hildesheim and Gandersheim connecting Augsburg, Nuremberg and Frankfort with such great trading cities of the north as Bremen and Hamburg, skirted the Harz on the west.[5] The road through Thüringia (*Thüringerstrasse*) met the one from Nuremberg (*Nürnbergerstrasse* or *Augsburgerstrasse*) at Osterode west of the Harz.[6] At Seesen a few miles north, this road united with that which came from Frankfort, by way of Göttingen and Northeim. The direct route from Nuremberg continued from Nordhausen following the eastern line of the Harz and passing through Brunswick to Hamburg and Bremen. The great east and west road which connected Leipzig, Halle and Magdeburg with Cologne on the Rhine lay north of the Harz and passed through Brunswick and Hildesheim. Brunswick was particularly important because of its location where the Oker ceased to be navigable. At that point the river divided and so could be easily bridged. The city because of its location at the cross roads, had been of commercial importance since the eleventh century.[7] Hildesheim occupied a similar position, for the north and south road, which skirted the western border of the Harz, passed through it to Hanover. In the sixteenth century an important military road also ran from Magdeburg through Wolfenbüttel to Hildesheim.[8] But the trade went through Hildesheim and Brunswick and Duke Julius tried in vain to make his capital an important commercial center. Goslar lay at the northern extremity of the Harz. Aside from its prestige as the capital of the Saxon line, this city owed its importance solely to its mines and smelting-houses.[9] It was a member of the Hanse and in closest association with the North Sea cities. While not on a main thoroughfare it

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England and the Netherlands by routes which would take them around Germany. *Reichstagakten*, III, J. R. 641, 642, 643, 644. Julius' interest in canals may be interpreted as an attempt to make German cities profit by the new sea routes.

[5] Günther, *Der Harz*, 126.

[6] Günther, *Die Besiedelung*, etc., H. Z., 1884, 3.

[7] Meyer, *Untersuchungen*, etc., Jb. G. V. B., 1902, 3.

[8] Schmidt, *Der Einfluss der alten Handelswege in Niedersachsen*, Z. N. S. 1896, 493; Meyer, *op. cit.*, 4.

[9] Neuburg, Z. für Staatswissenschaft, 40, 90.

lay in the midst of a network of roads and was only a few miles from the great trade arteries. One of these was tapped at Osterode by a road running west from Goslar. This was the only road in the Upper Harz to offer the hospitality and protection of a monastery to travelers. Celle was founded near the site of the later town of Zellerfeld in the twelfth century, a time of great prosperity for the trade of Goslar.[10] The "old road" later called the "Halberstadt military road," led east from Goslar to Halberstadt and made possible a lively trade in mine products.[11] This connection was essential for those merchants of Goslar who had trade relations with the great cities of south Germany. A military road also connected Goslar with Hildesheim.[12] The most important road through the Harz was the *Kaiserweg* which connected Harzburg with Nordhausen, traversing the entire district from north to south.[13] It also connected with Goslar and Oker by a branch, the *Eiserne Weg*, whose name probably indicates the nature of the wares transported over it. It was in such bad condition in the sixteenth century that Julius of Brunswick-Wolfenbüttel in 1571 ordered that "the old road over the Harz to Andreasburg, Ellrich and Nordhausen" be made passable again, "for it is several days' journey nearer the lands of Meissen and Franconia than if one went around the Harz."[14] It was an essential part of Julius' policy to build bridges and

[10] Günther, *Der Harz*, 128.

[11] Fischer, *Alten Strassen und Wege*, etc., H. Z., 1911, 178.

[12] An interesting itinerary (*Itinerarrolle*) dating from about 1520 has been preserved. It gives the mileage between all the chief cities on the European trade routes. An indication of the relative importance, in the sixteenth century, of the trade between east and west, and that between north and south, is seen in the fact that almost all the distances given in this itinerary are on north and south lines. H. G. B., 1908, 168. Road maps were common after 1550.

[13] The exact line of this road is not known. H. Z., 1911, 198. The source references call it, in the Middle Ages, the *Heidensteig*. Günther suggests, *Der Harz*, 129, that it may have existed before the Saxons were converted. It was rebuilt in the eighteenth century and formed a connecting link between Bremen and Leipzig. Thus the Prussian duties were avoided.

[14] A similar order had been issued the year before. See H. Z., 1911, 206 In a report of 1572 Julius mentioned the ruined mines (*Magnetgruben*) near this road. Günther, *Der Harz*, 132. The monastery of Walkenried undoubtedly used this road for transporting the share of the Rammelsberg ore which was given it in the twelfth century. The road also went by other names. See Fischer, *Alte Strassen*, etc., H. Z., 1911, 185 ff.

improve the roads through the Harz for the transport of the wares from his mines. The subject was under frequent discussion and in 1579 the duke announced that the officials of the district would be dismissed if repairs were not made on a road over which coal was carried.[15] A road important for sending out mine products traversed the Harz from north to south, from Ilsenburg through Elend to Ellrich (*Elendstrasse.*)[16] Farther east, the most used road connected Wernigerode with Nordhausen, and the *Leipzigerstrasse.* These Harz roads formed a link between the trading cities of the north and Thüringia and Franconia.[17] The connection of Harzburg and Goslar with Osterode by road is probably older than the mine cities of Wildemann and Zellerfeld. This thoroughfare passed the monastery of Celle and was a military road, but after the discovery of salt at Harzburg (1569) it was much used for carrying salt to the mine cities.

From the early days of the Hanse, the league arranged for a transport and messenger service. The most important route through the lower Saxon circle from the beginning of the fourteenth to the middle of the seventeenth century was from Nuremberg through Brunswick and Celle to Hamburg. At the end of the sixteenth century Nuremberg, the great center for Italian goods, took charge of the weekly transport. There were regular rates for wares and travelers. At this time two wagons started every Saturday from Hanover to Hamburg.[18] Brunswick, head of the league of Saxon cities, and an important member of the Hanse, had a large trade with Hamburg and as early as the fourteenth century despatched post riders to such neighboring cities as Hildesheim and Goslar.[19] Henry the Younger was the founder of a government messenger service in his duchy. Before his time

[15] Bodemann, *Die Volkswirthschaft*, etc., 211; Günther, H. Z., 1913, 143. The question of the exact routes and names of these roads is an intricate one. See Fischer, *Alte Strassen*, etc., H. Z., 1911, 175.

[16] Günther, *Der Harz*, 134, 136.

[17] From Thüringia an important road led to Frankfort by way of Bamberg.

[18] Bernhards, *Zur Entwickelung des Postwesens in Braunschweig-Lüneburg*, Z. N.S., 1912, 7.

[19] Schucht, Braunschweig Magazin, 1897, 137.

there had been a very restricted system of communication. He sent regular messengers from the court at Wolfenbüttel, by way of Seesen and Herzberg to Coburg, Bamberg and Ansbach. There was also a postal system with the Spanish Netherlands for communication between the king of Spain and the princes of Brunswick. Religious and political motives caused Julius to abandon this service.[20] Henry's messenger system served only the court. Julius planned to enlarge it for the use of the people, and tried to interest the duke of Calenberg in such a venture (1586). It was to be regular so that officials need not send special messengers. For some reason this plan never materialized. Enlarging on Henry's system Julius had a regular messenger service with such neighboring states as Saxony, Hesse and Ansbach which operated between the cities of Wolfenbüttel, Halberstadt, Leipzig, Dresden, Magdeburg, Coburg, Gotha, Heidelberg, etc.

There was a great increase of robbery and private warfare in Germany towards the end of the fifteenth century. A perpetual peace had been declared at the Diet held at Worms in 1495, and in 1546 Charles V met the princes of the lower and upper Saxon and Westphalian circles to consider how the danger from highway robbers might be averted. Burghers were not safe in their own houses; horse stealing was common; and travelers and merchants, even though they carried arms and were accompanied by dogs, were in grave danger.[21] The princes met the problem by improving the condition of the roads hoping thus to gain security for those who used them. Duke Ernest of Lüneburg, having heard of an attack on merchants in his dominion joined them and helped put the robbers to flight.[22] Henry the Younger seems to have winked at freebooters if he did not actually protect them, especially when their activities were directed against his dearest foe, the city of Brunswick. Rehtmeier tells the story of a knight of Mecklenburg who lived at Henry's court and supported himself and his band of fifteen by lying in wait for unwary travelers "often also those from Brunswick." The insecurity of the roads was one of the points at issue in the quarrel between Henry and Brunswick. In the deliberations of 1541 the

[20] Bernhards, *op. cit.*, 4; Schucht, *op. cit.*, 147, 149.

[21] Deichert, *Freibeuter und fahrende Leute*, etc., H. G. B., 1908, 313 ff.; Kaser, *op. cit.*, 449.

[22] Rehtmeier, *op. cit.*, 1347.

city complained "that the duke's riders prevented merchants from journeying to the fair at Leipzig."[23] The burghers were so convinced of the duke's indifference to the many highway robberies which befell the merchants of their city that at a wedding in the village of Barbke they took several of the duke's officials prisoner (1550). The agreement of 1553, as well as one of 1561, arranged for free and safe transport of goods belonging to the city, and payment of the taxes due to Henry.[24] The safety of the roads was essential to the success of Julius' commercial enterprises and he made strong and untiring efforts to gain the desired end. In an edict of 1570, Julius complained of highwaymen and ordered his officials to drive them from the country. But the evil was of too long standing to be easily uprooted and an edict of 1584 shows that bad conditions persisted. In it Julius ordered his officials to arrest the robbers and convey them to the nearest court for trial.[25]

In spite of the discovery of the sea route to India which made Portugal rather than Venice the distributing point for eastern goods, the sixteenth century was a time of great prosperity for the cities of northern Germany, especially the coast towns and those located on navigable rivers. Lübeck may be taken as a type of the city which enjoyed an access of prosperity due to the growing trade in Indian goods and the influx of metals from America. The tax lists show that the number of ships which entered the harbor annually mounted from 795 in 1497 to 5295 in the end of the sixteenth century.[26] The shipping of Bremen, Hamburg and Amsterdam also showed a similar increase. The ships registered as passing out to sea were often owned in smaller cities, such as Oldenburg, Lüneburg and Hanover which were located on navigable rivers. Göttingen was a type of the city which owed its importance to its position on a great land route. It was a place of deposit for goods which were being transported

[23] Hassebrauk, *Heinrich der Jüngere*, etc., 35.

[24] *Ibid.*, 60; *Braunschweig Hofgerichtsordnung, Transactio inter Henricum Iuniorem et civitatem Brunsvicens.*

[25] Bodemann, *Die Volkswirthschaft*, etc., 212, 213.

[26] Schäfer, *Niedersachsen und die See.* Z. N.S., 1909, 12 ff.

Among these were ships belonging to Duke Julius manned by citizens of the city of Brunswick and flying its flag. These ships plied between Lübeck and Russia and exchanged the products of the Harz mines for such Russian luxuries as furs, malachite, etc. Hassebrauk, *Julius*, etc., 50.

between Lübeck, Hamburg and Lüneburg in the north and Nuremberg and Frankfort in the south.[27] Brunswick, one of the most important towns of north Germany lay within the Brunswick-Wolfenbüttel lands. Sebastian Münster said of it: "In our times Brunswick is the most prosperous as well as the largest city in Saxony. It is well built with walls, moats and towers and adorned with beautiful houses, fine streets and large and handsome churches."[28] The Oker was navigable as far as Brunswick, and at this point two important trade routes intersected. Though Brunswick never attained its ambition of becoming a free imperial city it was practically self-governing and the ordinances passed by the city council were the careful regulations necessary for a great industrial centre. An old right won from the princes allowed the citizens of the city to trade free of taxes throughout the duchy,[29] and during the sixteenth century the town often acted independently of the duke in prohibiting the import and export of certain commodities.[30] All business was carefully regulated and relative values are to be inferred from the number and strictness of the ordinances governing different trades. Brewing stood easily first among the city industries and every detail of the conditions under which beer might be made was carefully regulated. In fact the brewers of the city of Brunswick maintained a sort of beer monopoly throughout a large part of the duchy.[31]

[27] Zeiller, *op. cit.*, 94.

[28] *Cosmographia*, lib. III, cap, 444.

[29] Hassebrauk, *Heinrich der Jüngere*, etc., 11. The city of course paid other taxes to the duke. See text of the agreement of 1553, Rehtmeier, *op. cit.*, 925 ff. The duke also claimed the right to have the imperial taxes of the city paid through him. Brunswick naturally preferred to pay such taxes into the treasury of the lower Saxon cities at Hanover, and did so whenever she was strong enough. Achilles, *Die Beziehungen der Stadt Braunschweig zum Reich*, 42 ff. See above 38.

[30] Schmoller, *Mercantile System*, 29; *Urkundenbuch der Stadt Braunschweig* 424.

[31] Hassebrauk, *Julius*, etc., 52. One of the points at issue between both Henry and Julius and Brunswick was this question of brewing. The burghers complained that the princes encroached on their rights. Many laws governing this industry are printed in the *Urkundenbuch der Stadt Braunschweig*. A certain beer produced in Brunswick was largely exported to Holland and England, because it was the only beer which could be carried across the equator without spoiling. *Ibid.*, 41.

The chief articles of commerce produced in north Germany were grain, flax, hemp, furs, wax, salt, forest and mine products, glass, woolen goods, beer, smoked fish and food of all kinds. Agriculture was encouraged by the dukes of Brunswick even in the mine towns and generally speaking farming and cattle raising created the chief wealth of the fertile low lands of the northern part of the duchy.[32] The growing of flax was of importance in this district as early as the fourteenth and fifteenth centuries and the linen produced here had a reputation even outside the country and was a chief article of commerce throughout Saxony, in Westphalia and in foreign countries.[33] The importance of sheep raising may be estimated from the ordinance prepared by Henry the Younger in 1562. This regulated the business carefully and was submitted to the estates but not accepted.[34] The manufacture of wool had been considerable from the end of the Middle Ages when weavers from Flanders settled in north Germany.[35] The industry was of such great importance throughout Germany as to be the subject of frequent legislation in the Diet where the quality of the cloth and the conditions of its sale were regulated in the sixteenth century.[36] The German wool manufacturers were so troubled by English competition that a representative of Julius of Brunswick brought their complaints before the Diet which met at Augsburg in 1582. The grievance was that the German cities, particularly Lübeck and Cologne, had lost their privileges in the Steelyard in London. Formerly the Germans had imported English cloth into Germany but this profitable business had been taken from them by the English who sold their cloth in Germany at any price they pleased. Julius proposed to cure the evil through a law which should allow Germans to wear only domestic cloth.[37] This would have been especially favorable for the duchy of Brunswick for cloth making

[32] Zeiller, *op. cit.*, 197. Wine was never of economic importance in the Harz, but grapes could be grown on the slopes of the mountains. Henry and Julius both encouraged the industry, the former going so far as to offer a bonus on all wine produced. H. Z., 1875, 293; 1870, 367, 726.

[33] Hornung, *Entwickelung und Niedergang des Hannoverschen Leinwandindustrie.* Zeiller, *op. cit.*, 161, 197.

[34] Von Bülow, *op. cit.*, 72.

[35] Z. N.S., 1896, 478.

[36] *Heiligen Römischen Reichs Ordnungen*, 1530, 1548, 1559, 1570.

[37] Bodeman, *Herzog Julius von Braunschweig*, etc., 48 ff.

was one of the most profitable occupations of the city of Brunswick and the chief one of Göttingen where in 1475 there were 800 master weavers.[38]

The export of raw metals from Germany increased during the sixteenth century until the loss of silver was considered so serious that the propriety of forbidding the princes to sell unminted silver to foreigners was discussed in the Diet.[39] The raw products of the Harz mines were sent to all parts of the Empire, especially lead from the Rammelsberg which was greatly used in Thüringia, Bohemia and Saxony.[40] Julius was far from being the only prince who carried on a trade in mine products. His neighbors on the east, the counts of Stolberg had a prosperous business in brass ware with the commercial houses of south Germany, the Rhine cities, those on the North Sea and in the Netherlands, and even with Russia. In 1524 the count of Mansfeld established copper smelters in his Thüringian forests. The count of Stolberg and Philip of the Brunswick-Grubenhagen line also invested in this venture.[41] The manufacture of metals was of tremendous economic and artistic importance in Germany. In the sixteenth century Nuremberg and Aachen were the centres of this industry, the middle Rhine district being the more prosperous. Copper and brass were manufactured in many places between Antwerp and Cologne. The Welsers of Nuremberg had a permanent store house in Antwerp, but the Fuggers did an even larger business there, for between 1526 and 1539 they brought annually 12,000 hundredweight of Hungarian copper to that city. Antwerp was also an important lead market.[42] Lüneburg too had a thriving copper trade. The Fuggers deposited about 43,000 hundred-

[38] Zeiller, *op. cit.*, 95. A contract made by Wolfgang, count of Stolberg, whose lands adjoined Brunswick on the east, with a merchant who was commissioned by the Tsar of Russia to buy wool in Germany has been preserved. For five years all the wool produced on the Stolberg lands was to be delivered to the merchant in Brunswick or Halberstadt at the price current at the Frankfort or Leipzig fair. The wool was evidently not manufactured. Jacobs, *Zur Geschichte des harzischen Handels*, H. Z., 1869, part 3, 150.

[39] *Reichstagakten*, Jüngere Reihe, IV, 509 ff.; Falke, *Deutsche Handels*, II, 368.

[40] Crusius, *op. cit.*, 258.

[41] Möllenberg, *Die Eroberung des Weltmarkts durch das mansfeldische Kupfer*, 17, 27.

[42] *Ibid.*, 36, 46, 49, 50.

weight of copper there between 1526 and 1539. This was probably used in making the bells for which Lüneburg was famous.[43] The manufacture of metals was widespread. Almost every city in Germany produced copper and brass utensils and silversmiths and ironsmiths were important people in Brunswick as well as in many other towns. The use of metals for money is connected with the serious problem of a uniform currency for the Empire. During the sixteenth century this matter was under frequent discussion in the Diet. The suggestion was made at Nuremberg (1524) that all the silver produced in Germany for ten years should be sold at market price to the government to be used in the imperial mints.[44] The reform was opposed by the princes, especially those whose lands produced silver. They deprived the towns of the right of coinage while guarding jealously the privilege for themselves.

Forests were of the greatest importance as a source of fuel for smelting. The Fuggers found it profitable to establish a smelting-house for Hungarian copper in the woods of Thüringia, and it was the Harz forests which made possible the successful mining enterprises of the dukes of Brunswick. But the wood of the Harz was of economic importance aside from its use as fuel, for it was suitable for the beautiful plaster and timber house architecture which reached its highest development in Germany. The pine found in the higher mountains was particularly good for such work. Halberstadt was the centre of the wood trade. Brunswick, Wolfenbüttel and other less important towns on the Brunswick lands got their building wood from the forests of the counts of Stolberg who monopolized this trade in their dominions.[45] The Harz forests also provided fuel for glass blowers. Zeiller describes an establishment in the woods near Greene. In each of two buildings twenty four glass blowers worked day and night. Not only wine and beer glasses were made, but also beautiful stained glass window-panes. This glass was exported

[43] Möllenberg, *Die Eroberung des Weltmarkts durch das mansfeldische Kupfer*, 39; Z. N.S., 1896, 500; Neu Vaterländische Archiv, 1831, 172.

[44] *Reichstagakten*, Jüngere Reihe, IV, 509, n. 3; Schmoller, *Mercantile System*, 35 ff.; *Urkundenbuch Hameln*, No. 776. The Count of Mansfeld tried in vain to prohibit the export of silver from his lands in 1527. Möllenberg, *op. cit.*, 35.

[45] Jacobs, *Zur Geschichte des harzischen Handels im 16 Jahrhundert*, H. Z., 1869, 145, 151 ff.

to Holland "and from there carried to other distant lands." Glass making was an important industry in the Harz about 1500, but it never recovered from the destruction of the furnaces during the Peasants' Revolt.[46]

Fairs and markets figure largely in connection with sixteenth century trade. Among the most important fairs in Germany were those held at Leipzig, Frankfort and Naumburg. Merchants gathered from all points of the compass in Leipzig at fair time, but the Frankfort fair ranked first among German fairs in international trade and exchange.[47] Market privileges were given by emperor or prince and included safe conduct to and from the market, protection of merchants and goods while at the market, favorable conditions of sale, etc. Such were the privileges given by Charles V to the city of Brunswick in 1521. In addition each market was most carefully regulated by the local authorities. At Hanover there were quarterly markets which attracted merchants from all over Europe. Princes often advertised that merchants passing through their dominions on the way to great fairs would be sure of protection.[48] The importance of these great international meeting places cannot be overestimated. They necessitated improved communication and at them men exchanged not only commodities but ideas. Knowledge and culture as well as necessities and luxuries were carried over the trade routes.

Such, in briefest outline were the conditions governing German trade and commerce in the sixteenth century. Against this vast background the activities of Henry and Julius of Brunswick should be seen in their true perspective. Germany teemed with manifold commercial life of which one phase, in a small state of the Empire has been the subject of this study.

[46] Zeiller, *op. cit.*, 96, 97. Fischer, *Die Alte Wasserwirthschaft und Industrie im Amte Harzburg*, Z. H., 1913, 209. Of course in the Harz sawmills were of great importance. They, as well as the mills for grinding corn, were run by waterpower. *Ibid.*, 207.

[47] Möllenberg, *op. cit.*, 53, 40.

[48] *Alterthümer, Braunschweig*, 98. The court regulations of Henry the Younger (1533) directed that saffron, pepper, sugar, almonds, olives, capers, and other spices be bought in Peter and Paul's market at Nuremberg or at the yearly fair in Leipzig. Herring, eels, salmon and other sorts of fish must come from Lüneburg; honey and strangely enough, salt, were to be purchased in Brunswick. H.Z., 1875, 291, 293.

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Z.K.G. für NS.	Zeitschrift der Gesellschaft für niedersächsische Kirchengeschichte.
Z.K.G.	Zeitschrift für Kulturgeschichte.
H.Z.	Zeitschrift des Harz Vereins für Geschichte.
Z.N.S.	Zeitschrift des historischen Verein für Niedersachsen.
Jb. G.V.B.	Jahrbuch des Geschichte Vereins für das Herzogthum Braunschweig.
V.R.G.	Verein für Reformations Geschichte.
H.G.B.	Hansischen Geschichtsblätter.

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